DEPARTMENT OF DEFENSE

NATIONAL GUARD AND RESERVE EQUIPMENT REPORT FOR BUDGET YEAR 2001

February 2000

FOREWORD

Our National Military Strategy rests on the ability to project United States military forces globally and to sustain the operational tempo upon deployment. Inherent in this strategy is the integration of Reserve components into a Total Force capable of supporting multiple synchronized missions across the continuum of military operations. This environment demands a military that is ready to respond at a moment's notice.

Properly equipping the Reserve components with compatible, interoperable, and up-to-date equipment is an important piece of this strategy. It is supported by the Department of Defense "first-to-fight, first-to-employ" policy, which underlies equipment distribution and requires that equipment is provided to units commensurate with their planned wartime deployment, irrespective of component.

In response to Congressional reporting requirements identified in Title 10, United States Code, Section 10541, the National Guard and Reserve Equipment Report (NGRER) describes the individual plans of each Service, and the United States Coast Guard, to meet equipment on-hand requirements to support the National Military Strategy. Additionally, the report addresses the readiness and integration called for by the Secretary of Defense in his Total Force Integration memorandum of September 4, 1997.

The format of the NGRER for fiscal year 2001 has been changed to provide a more succinct and useable report. Specifically, chapter one is an overview of the state of Reserve component equipment readiness and provides an analysis of key issues, such as equipment availability, equipment shortages, procurement plans to fill shortages, and compatibility and interoperability issues affecting Reserve component equipment. Chapters two through six provide detailed narratives and data tables for fiscal years 2001 through 2003, and articulate both the Service and the individual Reserve component equipment plans.

The NGRER provides evidence that the Services have begun to integrate the Reserve components into their plans and programs. However, there is still work ahead to fully achieve Total Force integration. To this end, the Department of Defense will continue to ensure integration of the Active and Reserve components, and enhance equipment modernization to meet future world challenges and commitments.

Sincerely,

Charles L. Cragin

THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

4 SEP 1998

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
COMMANDANT OF THE COAST GUARD
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARMENT OF DEFENSE
COMMANDERS OF THE COMBATANT COMMANDS
DIRECTORS OF THE DEFENSE AGENCIES
CHAIRMAN OF THE RESERVE POLICY BOARD

SUBJECT: Anniversary of the Secretary of Defense Memorandum "Integration of the Reserve and Active Components" dated September 4, 1997

One year ago today, the Secretary of Defense asked each of us to create an environment that eliminates all residual barriers – structural and cultural – for effective integration within our Total Force. We have achieved unprecedented progress in our efforts to reach the goal of a seamless Total Force that provides the flexibility and interoperability necessary for the full range of military operations.

Reservists today are essential players in the Total Force and are vital to our national security. Reserve forces contributed nearly 13 million mandays to Total Force missions and exercises last year. This is equivalent to adding nearly 35,000 personnel to the Active force. Reserve component (RC) Soldiers, Sailors, Marines, Airmen, and members of the Coast Guard are now an integral part of our global presence. Operations in and around Bosnia have been an enormous integration success story.

Structural barriers are being eliminated. The Army plan to use six Army National Guard enhanced readiness brigades to form the core of two new integrated divisions, under active component (AC) commanders, by October 1999 is on schedule. The Air Force has announced plans for the creation of ten Air Expeditionary Forces to respond to current operations. Air Reserve Components are fully integrated into these plans. The Navy has two fully integrated mine countermeasure helicopter squadrons manned with AC and RC personnel with commanding officers selected from either component. The Marine Corps is adding the Light Armored Vehicle Air Defense (LAV-AD) vehicle to its inventory using a new AC/RC integration paradigm. A LAV-AD platoon, manned completely by active-duty Marines, is now assigned to the Reserve 4th Light Armored Reconnaissance Battalion at Camp Pendleton, California. "Team Coast Guard" has integrated all active and reserve personnel into its units at all levels. There are two new general officer National Guard and Reserve positions on the Joint Staff to advise the Joint Chiefs of Staff on RC issues. A major overhaul in the Army's Director of Military Support (DOMS) office has taken place with the appointment of a National Guard

general as the DOMS Deputy Director and up to half of the inter-service DOMS operations center staff coming from the RC.

Cultural barriers are being eliminated as well. For example, the active Army has established a stronger line of communication with the National Guard and Reserve. The transition to green military identification cards for Reservists began in June 1998 at Fort Dix, New Jersey. The Reserve components are better represented in the Department's management structure than ever before. Active and Reserve component decision-makers now sit side by side at key points in the planning, programming and budgeting process to determine requirements and allocate resources.

Yet, despite our many successes, further actions are necessary before we realize our shared goal of an integrated Total Force. I encourage each of you to use this anniversary of the Total Force Integration Memorandum to assess your progress, take stock of residual cultural and structural barriers, and put in place plans for the future.

John J. Hamre

THE SECRETARY OF DEFENSE

WASHINGTON, THE DISTRICT OF COLUMBIA

SEP 4 1997

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
COMMANDERS OF THE COMBATANT COMMANDS
DIRECTORS OF THE DEFENSE AGENCIES
CHAIRMAN OF THE RESERVE FORCES POLICY BOARD

SUBJECT: Integration of the Reserve and Active Components

I want to emphasize the increasing reliance on Reserve components which has occurred since the end of the Cold War and request that DoD leaders recognize and address any remaining barriers to achieving a fully integrated Force. Department policies attempting to integrate the Reserve and Active Components have existed since 1970.

- In August 1970, then Secretary Melvin Laird set this Department on the right course when he directed concurrent consideration of the Total Force, Active and Reserve, in planning, programming, manning, equipping and employing Guard and Reserve Forces. He recognized that the lower peacetime sustaining costs of Reserve force units can result in a larger total force for a given budget. These insights will continue to guide each Service in its planning, programming, budgeting and execution processes.

- In August 1973, then Secretary James Schlesinger directed each Service Secretary to provide the manning, equipping, training, facilities, construction and maintenance necessary to assure that the Selected Reserve units meet deployment times and readiness required by contingency plans. This designation of responsibility continues to be DoD policy. Inherent in this responsibility is setting a common readiness standard for the Active and Reserve components -- tailored to the assigned mission -- and testing both regularly to this standard.

- In June 1982, then Secretary Caspar Weinberger addressed equipment, reiterating that "units that fight first shall be equipped first regardless of component," and that Active and Reserve units planned for deployment at the same time should have equal claim on modern equipment inventories. Clearly, units that fight together should be equipped compatibly, regardless of component. And so, Active and Reserve component units which have similar contingency missions, and which are planned to be deployed in the same phase of a contingency, should have similar claims to compatible equipment.

- In April 1995, then Secretary William Perry reemphasized that we could make increased use of Reserve components to perform operational missions given "better identification of and planning for requirements, flexibility in the training and employment of Reservists, and programming the funding to meet these requirements." He noted that, "Increased reliance on the Reserve Components is prudent and necessary in future policy, planning and budget decisions." Implicit in this statement is the need to work together as a team toward achieving a seamless Total Force.

Today, I ask each of you to create an environment that eliminates all residual barriers – structural and cultural – for effective integration within our Total Force. By integration I mean the conditions of readiness and trust needed for the leadership at all levels to have well-justified confidence that Reserve Component units are trained and equipped to serve as an effective part of the joint and combined force within whatever timelines are set for the unit – in peace and war. Only when the following four basic principles are achieved throughout the Department will Total Force integration be a reality.

- Clearly understood responsibility for and ownership of the Total Force by the senior leaders throughout the Total Force;
- Clear and mutual understanding on the mission for each unit – Active, Guard and Reserve – in service and joint/combined operations, during peace and war;
- Commitment to provide the resources needed to accomplish assigned missions;
- Leadership by senior commanders –Active, Guard and Reserve – to ensure the readiness of the Total Force.

Our goal, as we move into the 21st century, must be a seamless Total Force that provides the National Command Authorities the flexibility and interoperability necessary for the full range of military operations. We cannot achieve this as separate components. Much progress has already been made. We must continue to work towards the principles of Total Force and achieve full integration of the Reserve and Active components.

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Introduction

I. Report Requirements

a) Overview of Statutory Requirement: The Department of Defense (DoD) Authorization Act of 1982 (Public Law 97-86) established the requirement for DoD to provide an annual report to the Congress, by February 15th of each year, on the status of National Guard and Reserve equipment; hereafter referred to as the National Guard and Reserve Equipment Report (NGRER). The Goldwater-Nichols DoD Reorganization Act of 1986 amended Title 10 of the US Code placing the reporting requirement under Section 115(b). The Congress in Public Law 103-337 transferred reporting requirements to a new Subtitle E, Reserve Components, Part 1, Chapter 1013, which was re-designated Section 10541. Finally, in compliance with the FY 1993 National Defense Authorization Act, Section 1134, Title XI, the NGRER was expanded to include a description of the current status of equipment incompatibility between the Active and Reserve components, the effect of that level of incompatibility, and the plan to achieve full compatibility.

This report is prepared by the Office of the Assistant Secretary of Defense for Reserve Affairs with the Department of the Army, the Department of the Navy, the Department of the Air Force, and the Department of Transportation (US Coast Guard).

b) Current Law: The section below is an excerpt from Title 10, United States Code, Section 10541.

National Guard and Reserve component Equipment: Annual Report to Congress

(a) The Secretary of Defense shall submit to the Congress each year, not later than February 15, a written report concerning the equipment of the National Guard and the reserve components of the armed forces for each of the three succeeding fiscal years.

(b) Each report under this section shall include the following:

(1) Recommendations as to the type and quantity of each major item of equipment which should be in the inventory of the Selected Reserve of the Ready Reserve of each reserve component of the armed forces.

(2) A statement of the quantity and average age of each type of major item of equipment which is expected to be physically available in the inventory of the Selected Reserve of the Ready Reserve of each reserve component as of the beginning of each fiscal year covered by the report.

(3) A statement of the quantity and cost of each type of major item of equipment which is expected to be procured for the Selective Reserve of the Ready Reserve of each reserve component from commercial sources or to be transferred to each such Selected Reserve from the active-duty components of the armed forces.

(4) A statement of the quantity of each type of major item of equipment which is expected to be retired, decommissioned, transferred, or otherwise removed from the physical inventory of the Selected Reserve of the Ready Reserve of each reserve component and the plans for replacement of that equipment.

(5) A listing of each major item of equipment required by the Selected Reserve of the Ready Reserve of each reserve component indicating -

(A) the full war-time requirement of that component for that item, shown in accordance with deployment schedules and requirements over successive 30-day periods following mobilization;

(B) the number of each such item in the inventory of the component;

(C) a separate listing of each such item in the inventory that is a deployable item and is not the most desired item;

(D) the number of each such item projected to be in the inventory at the end of the third succeeding fiscal year; and

(E) the number of non deployable items in the inventory as a substitute for a required major item of equipment.

(6) A narrative explanation of the plan of the Secretary concerned to provide equipment needed to fill the war-time requirement for each major item of equipment to all units of the Selected Reserve, including an explanation of the plan to equip units of the Selected Reserve that are short of major items of equipment at the outset of war.

(7) For each item of major equipment reported under paragraph (3) in a report for one of the three previous years under this section as an item expected to be procured for the Selected Reserve or to be transferred to the Selected Reserve, the quantity of such equipment actually procured for or transferred to the Selected Reserve.

(8) A statement of the current status of the compatibility of equipment between the Army reserve components and active forces of the Army, the effect of that level of incompatibility on combat effectiveness, and a plan to achieve full equipment compatibility.

(c) Each report under this section shall be expressed in the same format and with the same level of detail as the information presented in the annual Five Year Defense Program Procurement Annex prepared by the Department of Defense.

II. Report Objective

Based upon the law, the Office of the Assistant Secretary of Defense for Reserve Affairs (Materiel & Facilities), with concurrence from all Services, has identified the following objectives:

- Provide the Services' plan to equip their Reserve forces in a time of shrinking DoD budgets.

- Concentrate on fiscal years 2001 to 2003 Reserve component requirements, procurements and changes.

- Provide an overview of current RC equipment from three perspectives:
  - current status of equipment on-hand
  - future year equipment procurements for FY 2001 - FY 2003
  - remaining shortfall and unfunded requirements for FY 2004 and beyond.

- Focus primarily on major items of equipment which include aircraft, tanks, ships, trucks, engineer equipment and major items of support equipment. These items normally will include large dollar-value requirements, critical RC shortages, Service and National Guard & Reserve Equipment Appropriations (NGREA) procured items, and any RC specific item which the Chief of the specific RC wishes to highlight.

III. Report Contents

a) Report Introduction / Overview and Analysis (Chapter 1): The Introduction provides an overview of statutory requirements, report objectives, and terminology. The Overview and Analysis chapter presents a composite Department of Defense perspective on National Guard and Reserve equipment and serves as the executive summary of the report.

b) Service Narratives and Data Tables (Chapters 2-6): Chapters 2 through 6 discuss each Service and their respective Reserve components by addressing RC equipping policies and methodologies. Each chapter contains a Service overview, RC overview, and a discussion on current equipment status, future equipment procurements, and remaining shortfall and unfunded requirements. Additionally, each chapter contains a discussion describing the current status of equipment compatibility/interoperability between the Active and Reserve components of each Service, the effect of that level of compatibility/interoperability, and a plan to achieve full compatibility/interoperability.

Reserve component data tables for each Service contain specific information on major items of equipment selected for this report and are placed at the end of each RC narrative section. The NGRER articulates data in seven tables (*Tables 1-7*) for each RC; however, some RCs have omitted tables which do not apply to their component; therefore, a blank page has been inserted to note that no data is available for that RC. The "Data Table Explanation" at the end of this section defines the data contained in *Tables 1-7*.

IV. Equipment Substitution

If an on-hand item of equipment is to be employed in lieu of the required item in wartime (due to an equipment density shortfall of the required item), the on-hand item is classified as a "substitute item" and is reported as such in the Service substitute equipment list (*Table 7*) located at the end of each RC narrative. An item in a Service's data table which is used as a substitute item may not show a requirement for those quantities of the item which are considered substitutes. The requirement, in this case, is reported against the "preferred" item.

V. Terminology and Definitions

Major Items of Equipment include aircraft, tanks, ships, trucks, engineer equipment and major items of support equipment. These items normally will include large dollar-value requirements, critical RC shortages, Service and National Guard & Reserve Equipment Appropriations (NGREA) procured items, and any RC specific item which the Chief of the specific RC wishes to highlight.

Required Quantity is the total number of an item required to be on-hand or available to Reserve component units to go to war and accomplish their mission(s). This includes requirements for war reserve and other stocks. The simplified term "requirement," as used in this report, is synonymous with "full wartime requirement," and satisfies the requirement in Title 10 to provide a “recommendation” as to the type and quantity of equipment needed in RC inventories.

On-Hand Quantity is the equipment physically on-hand in Reserve or Active component units or in war reserve and other stocks specifically designed for wartime use by the Reserve or Active components.

Deployable Item is an item which, considering its suitability, operability, compatibility and supportability, will provide an expected degree of mission success sufficient to warrant its wartime operational employment.

Substitute Item is not the most desired item but based upon its capability can be employed in wartime in lieu of a combat essential required item of equipment.

Equipment Shortage (Shortfall) is the difference between the quantity required and the quantity on-hand, excluding substitute items and excess quantities beyond the required quantity.

Modernization Shortfall is the difference between the required quantity of the most modern item and the on-hand quantity of that item. Modernization shortfalls are not necessarily equipment shortages, as most Services substitute older versions of an item for the most modern item. Therefore, modernization shortfalls are shortages of the most modern item only.

VI. Data Table Explanations

a) A separate set of Data Tables (*Tables 1-7*) is provided in Chapters 2 through 6 for each Reserve component. These tables contain the required information relative to major items of equipment identified in the report. The following list identifies the separate data tables that should be included in the report for each RC. (Note: Some tables may not be applicable for all Reserve components.)

- Table 1: Major Item Inventory and Requirements (This is an all-inclusive table while other tables are subsets of *Table 1*)
- Table 2: Average Age of Equipment
- Table 3: Service Planned Procurements (P-1R Data)
- Table 4: NGREA Planned Procurements (FY 1998 – FY 2000)
- Table 5: Projected Equipment Transfers and Withdrawals
- Table 6: Planned vs. Actual Prior Year Procurements and Transfers
- Table 7: Major Item of Equipment Substitution List

b) The following paragraphs provide an explanation of the data table columns and data criteria by Table.

Table 1: Major Item of Equipment Inventory. This table provides a comprehensive list of all major items of equipment the Reserve component chooses to highlight, by providing key administrative data, on-hand inventories and wartime requirements.

Nomenclature is the description or common name of the item of equipment.

Reserve Component (RC) is the specific Reserve or National Guard entity, i.e. Army National Guard (ARNG), US Army Reserve (USAR), US Marine Corps Reserve (USMCR), Air National Guard (ANG), US Air Force Reserve (USAFR), US Naval Reserve (USNR) and US Coast Guard Reserve (USCGR).

Equipment Number is the individual Service equipment identification code: Line Item Number (LIN) for Army; Table of Authorized Materiel (TAM) for Marine Corps; Equipment Cost Code (ECC) for Navy engineering items; and National Stock Number (NSN) for Air Force.

Cost is the FY 2001 procurement cost per unit. If an item is no longer being procured, the inflation adjusted cost from the last procurement is shown. If an item is programmed for initial procurement beyond FY 2001, the data table depicts the projected unit cost at the time of procurement.

Quantity On-hand (QTY O/H) is the actual/projected item count for a particular item of equipment for a given year.

Quantity Required (QTY REQ) is the authorized wartime requirement for a given item of equipment.

Table 2: Average Age of Equipment. This table is a subset of *Table 1* and highlights the average age of selected items of equipment.

Average Age is the calculated age of a given item of equipment. Since equipment is normally procured over several years, this figure provides an average age of the fleet.

Table 3: Service Planned Procurements (P-1R). This table highlights items of equipment which the Service intends to procure for their Reserve component. The source of this data is the P-1R exhibit to the President's budget.

Table 4: National Guard & Reserve Equipment Appropriation (NGREA) Procurements. This table highlights the items which the Reserve components plan on procuring with miscellaneous National Guard & Reserve Equipment funds. Since these funds are available for three years, this table highlights those items in the current procurement cycle.

Table 5: Projected Equipment Transfers and Withdrawal Quantities. This table portrays the planned equipment transfers (Active to Reserve), withdrawals, and decommissioning. Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

Table 6: Planned vs. Actual Prior Year Procurements and Transfers. This table compares what the Services planned to procure and transfer to the RC in FY 1999 with actual

procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered in FY 1999.

Planned Quantity is the item quantity the Service programmed to deliver to the RC as part of the their budgeting process.

Actual Quantity is the item quantity the Service actually delivered or has in the procurement cycle to deliver to the RC.

Table 7: Major Item of Equipment Substitution List. A list of equipment authorized by the Service to be used as a substitute for a primary item of equipment. This table also identifies whether this substitute item is an item which is suitable for deployment in time of war.

Nomenclature (Required Item / Substitute Item), see *Table 1* description for nomenclature.

Equipment Number (Required Item / Substitute Item), see *Table 1* description for equipment number.

Chapter 1
Analysis and Overview

I. Scope of Report

The National Guard and Reserve Equipment Report (NGRER) identifies major items of equipment in the Reserve components (RC) of each Service, to include the US Coast Guard, which are of interest to the Department of Defense and the Congress. Each year the Services and their Reserve components review the equipment currently in the RC inventories to determine which equipment should be included in the NGRER. Major items of equipment include aircraft, tanks, ships, trucks, engineer equipment and various items of support equipment. Equipment included in the report consists of large dollar-value requirements and equipment shortages, critical RC shortages, Service procurements for the RC and equipment procured with National Guard and Reserve Equipment Appropriation (NGREA) funds.
Chart 1 below compares the number of line items of equipment included in recent NGRERs.

Chart 1

Items of Equipment Reported in the NGRER			
Reserve Component	**FY 1999 NGRER**	**FY 2000 NGRER**	**FY 2001 NGRER**
Army National Guard (ARNG)	358	275	168
Army Reserve (USAR)	298	248	239
Marine Corps Reserve (USMCR)	154	146	154
Naval Reserve (USNR)	294	136	44
Air National Guard (ANG)	191	163	29
Air Force Reserve (USAFR)	127	121	17
Coast Guard Reserve (USCGR)	41	34	0
Total	1463	1123	651

NOTE: The USCGR included Active Coast Guard equipment in prior year reports. Current report focuses on USCGR equipment only.

The fiscal year (FY) 2001 NGRER highlights a total of 651 lines of major equipment currently in RC inventories. Although this represents a significantly smaller number of equipment line items compared to previous reports, it still represents approximately 87 percent of the total dollar value of all RC equipment on-hand and approximately 88 percent of the total dollar value of all RC equipment requirements. The line items of equipment dropped were a result of Service decisions to streamline reporting by focusing only on major items of equipment. This streamlining has minimal effect on the overall equipment analysis. Therefore, the items of equipment listed in this report represent a sufficient sample to draw accurate conclusions regarding the total inventory of RC equipment.

The analysis in this report is based primarily on dollar values which are weighted by high dollar-value equipment items such as ships and aircraft. Procurement costs are based on the Services' official data and reflect either the latest procurement cost adjusted for inflation, or the current replacement cost. In some cases, these costs over-value older equipment being withdrawn or redistributed to the RC. However, since withdrawals consist of only a few items of equipment per Service, this does not significantly affect the overall analysis.

II. Long Term Equipping Strategy

The Assistant Secretary of Defense for Reserve Affairs developed an RC Equipping Strategy to ensure that RC units are equipped to support the National Military Strategy, to include crisis response and peacetime engagements. The long-term goal of the equipping strategy is to have the Reserve components equipped with modern, compatible equipment to enable them to do their job side-by-side with the Active components and coalition partners. The equipping strategy is based on identifying all RC equipment requirements, using smart business practices whenever possible to resolve equipment shortfalls, and procuring new equipment only when necessary.

In 1996, the Assistant Secretary of Defense for Reserve Affairs issued a White Paper on "Equipping the Reserve Components" describing smart business practices executed by the Reserve components. An example widely used throughout the Reserve components is called the Extended Service Program (ESP) or Service Life Extension Program (SLEP). ESP/SLEP is used to extensively rebuild existing equipment at a fraction of the cost of new procurement. For example, a tactical truck nearing the end of its mechanical and functional life gains an additional 15 years using this method. The ESP/SLEP initiative has been successful in quickly providing reliable equipment at significant cost savings to the Reserve components of the Army, Marine Corps, Navy, and Air Force.

In Army units, excess models of certain equipment have been converted to models which are in short supply. For example, heavy cargo trucks have been converted into bridge transporters. The Marine Corps is launching a cost-saving program to modernize utility and attack helicopters into higher capacity systems through extensive upgrades and the application of four-blade rotors to replace the older two-blade rotor system. The Marine Corps, Navy, and Air Force routinely modify and upgrade their combat aircraft to increase capability and ensure compatibility within Service fleets.

The Reserve components are using the latest commercial practices, such as just-in-time inventory and controlled humidity storage, to achieve efficiencies and cost savings. In other cases, commercial items are used in lieu of military-specifications, and industry sources are now rebuilding equipment and providing repair parts support. The Service narrative sections discuss further details on the use of redistributed equipment and other smart business practices.

III. Equipment Availability to Meet Mobilization Requirements for FY 2003

This report answers the question as to how well the Reserve components are equipped to meet mobilization requirements during the next three years. To evaluate this condition, *Chart 2* on the next page provides the percentage of wartime required equipment identified in the NGRER which is expected to be in RC inventories at the end of FY 2003. The percentages take into account new equipment deliveries through the end of FY 2003. These percentages are based upon dollar-values to assist the Department of Defense and Congress in budget preparation. They include authorized substitute equipment for Services, where appropriate, as this reveals a more accurate picture of equipment anticipated to be available to the RCs in the event of war.

Chart 2
Equipment Available to Meet Mobilization Requirements
(Including Authorized Substitutes)

Reserve Component	FY 2000	FY 2003
ARNG	86%	85%
USAR	85%	82%
USMCR	99%	99%
USNR	96%	97%
ANG	99%	99%
USAFR	99%	99%
Overall	**94%**	**93%**

Note 1: FY 2000 values have been provided by RCs based upon all equipment currently on-hand. FY 2003 calculations are based upon *Table 1* data included in this report.
Note 2: USAR data for FY 2003 does not include modernization shortfalls for the FMTV and FLTV since substitute equipment will still be in the inventory and available for mobilization.

The data above suggests that overall RC equipment inventories will be 93 percent in place to satisfy FY 2003 mobilization requirements given delivery of planned procurements. The lower percentage in the USAR for FY 2003 includes new items of equipment that will not be fully fielded until much later. It also suggests that some RCs still have critical shortages of major equipment, especially for late deploying support units.

IV. Equipment Shortages

The Reserve components provided an overall dollar-value of all required equipment shortfalls, excluding substitutes, which are highlighted in *Chart 3* on the next page. The combined total of all these shortfalls is approximately $9.6 billion or 7.3 percent of all RC required wartime equipment.

Chart 3 indicates that the greatest percentage of equipment shortages is found in the Army. This is consistent with previous reports and is a result of the magnitude of different types, quantities and models of equipment currently in the Army inventory. The Army also has several initiatives which will affecting equipment requirements, such as the Army National Guard Division Redesign. This initiative will convert the equivalent of two combat divisions to combat service support and require significant equipment conversions across the next seven to ten years.

Chart 3

FY 2000 Reserve Component Equipment Shortages

(Excluding Substitutes)

Reserve Component	Total Value of Equipment Requirements	Total Value of Equipment Shortages	Percent Short
ARNG	44,968,000,000	6,897,000,000	15.3%
USAR	7,814,000,000	1,700,000,000	21.8%
USMCR	6,038,063,000	27,400,000	0.5%
USNR	17,207,000,000	632,257,000	3.7%
ANG	39,993,600,000	261,700,000	0.7%
USAFR	15,791,400,000	67,500,000	0.4%
Total	**$131,812,063,000**	**$9,585,857,000**	**7.3%**

Note: FY 2000 values have been provided by RCs based upon all equipment currently on-hand.

V. Equipment Procurements Programmed to Fill Current Equipment Shortages

The Services program for new equipment in the President's Budget annually. The exhibit in the President's Budget that deals with RC equipment is called the P-1R. *Table 3* (located at the end of each RC narrative section, Chapters 2-6) depicts the programmed procurements for the FY 2001 thru FY 2003 timeframe. Equipment normally begins to arrive in the RC inventory one to two years after appropriation; consequently, the FY 2000 procurements should begin arriving in FY 2002.

Service procurements in the past have not been sufficient to maintain RC equipment on-hand readiness. As a result, Congress has provided additional funds, specifically for the RC, in the National Guard & Reserve Appropriation (NGREA). *Table 4* (located at the end of each RC narrative section, Chapters 2-6) depicts specified aircraft and miscellaneous equipment procurements using NGREA funds appropriated in FY 1998 thru FY 2000. Since NGREA is not budgeted by the Services, there are no figures beyond the current budget period. As with other procurements, there is a one to two year lag for the RC to receive equipment once funds are appropriated.

Chart 4 on the next page compares funding from all sources for the RCs for FY 1997 thru FY 2001. The annual totals show a slight increase overall since 1997. Despite a shift away from NGREA, the total dollars available for RC equipment procurement remains fairly constant around $2 billion. The chart depicts that the Services have significantly increased RC procurement requests in the President's budget, which is a direct result of the Total Force Policy established in 1997 by the Secretary of Defense.

Annual RC equipment procurements have increased RC readiness of on-hand equipment but have not kept pace with the need to re-capitalize older RC equipment and modernize existing equipment. In the FY 2000 NGRER, RC equipment shortages were projected at $5.6 billion. This year the projection is approximately $9.2 billion, $3.6 billion higher than last year. This increase, while large in dollar-value, reflects only a 3 percent gain compared to the total value of all equipment requirements. It also reflects that the annual equipment procurements are not keeping pace with the need for new and more modern equipment in the RCs.

Chart 4

Reserve Component Procurement Funding Comparison

($ in Millions)

		ARNG	**USAR**	**USNR**	**USMCR**	**ANG**	**USAFR**	**Total**	**Grand Total**
FY 1997	*President's Budget P-1R Submit*	*218.70*	*48.30*	*36.60*	*69.40*	*287.50*	*109.20*	*769.70*	
	Congressional Adds to AC Accts for RC	*74.10*	*0.00*	*45.00*	*0.00*	*100.50*	*165.90*	*385.50*	
	Year-end Total Procured for RC	754.40	76.90	18.70	29.00	267.30	125.00	1,271.30	
	NG&RE Procurements	100.80	113.70	199.70	102.80	224.30	39.60	780.90	
	TOTAL	**855.20**	**190.60**	**218.40**	**131.80**	**491.60**	**164.60**		**$2,052.20**
FY 1998	*President's Budget P-1R Submit*	*284.40*	*120.60*	*39.00*	*17.90*	*242.40*	*84.90*	*789.20*	
	Congressional Adds to AC Accts for RC	*244.00*	*8.00*	*92.40*	*0.00*	*95.10*	*132.85*	*572.35*	
	Year-end Total Procured for RC	430.60	80.30	62.20	26.20	300.60	258.70	1,158.60	
	NG&RE Appropriation	68.80	73.70	78.70	73.70	302.90	49.20	647.00	
	TOTAL	**499.40**	**154.00**	**140.90**	**99.90**	**603.50**	**307.90**		**$1,805.60**
FY 1999	*President's Budget P-1R Submit*	*502.60*	*158.10*	*59.10*	*39.90*	*263.30*	*115.10*	*1,138.10*	
	Congressional Adds to AC Accts for RC	*224.30*	*9.50*	*47.50*	*0.00*	*75.40*	*129.80*	*486.50*	
	Year-end Total Procured for RC	825.00	135.20	44.90	38.60	332.90	188.60	1,565.20	
	NG&RE Appropriation	20.00	20.00	60.00	20.00	212.00	20.00	352.00	
	TOTAL	**845.00**	**155.20**	**104.90**	**58.60**	**544.90**	**208.60**		**$1,917.20**
FY 2000	*President's Budget P-1R Submit*	*661.10*	*176.00*	*77.40*	*56.90*	*334.10*	*149.20*	*1,454.70*	
	Congressional Adds to AC Accts for RC	*267.10*	*12.00*	*35.60*	*2.80*	*270.80*	*17.60*	*605.90*	
	Projected Year-end Total Procurement for RC	839.20	204.50	124.70	59.70	626.20	183.00	2,037.30	
	NG&RE Appropriation	29.84	29.84	19.90	19.90	29.84	19.90	149.21	
	TOTAL	**869.04**	**234.34**	**144.60**	**79.60**	**656.04**	**202.90**		**$2186.51**
FY 2001	*President's Budget P-1R Submit*	*884.20*	*174.20*	*34.80*	*26.50*	*326.90*	*127.60*	*1,574.20*	

Note 1: USNR figures include USMCR aircraft procurement funds.

Note 2: President's Budget P-1R Submit & Congressional Adds to AC Accts for RC are listed for comparison only. These figures are not

included in bottom line calculations.
Note 3: The above figures do not include Ammunition procured for the RC.

VI. Status of Current Reserve Component Equipment

An analysis of current equipment in the RC requires a look at several interrelated factors, such as age of equipment, compatibility, maintenance, modernization shortfalls and overall equipment readiness.

Based upon the Total Force integration policy, the Reserve components have seen growth in OPTEMPO and participation in on-going military operations. This requires the RCs to deploy with key equipment or to fall-in on pre-positioned equipment. Some of the RCs are seamlessly integrated and train on the same modern equipment as their Active component counterparts, while other RCs are struggling with compatibility and interoperability issues due to the magnitude of different types/models of equipment and cost of upgrading. The overall integration of the RC and AC is a delicate balancing act as requirements often outstrip available resources.

In many of the RCs a large portion of their equipment was received by cascading older equipment models from the AC to the RC as the AC received newer and more modern equipment. This transfer, although improving equipment on-hand readiness, created a host of maintenance and compatibility issues related to equipment age and modernization. Many times the RCs are faced with the dilemma of either accepting equipment in poor condition or seeing the equipment turned in as unserviceable. This forces the RCs to accept less than mission capable equipment and develop comprehensive repair and rebuild programs to extend the service life of the cascaded equipment. These programs cause the RCs to use a larger portion of their operations and maintenance dollars to repair this cascaded equipment. The Army, for example, is looking at establishing a depot rebuild program to bring cascaded equipment to full serviceability prior to RC hand-off.

Equipment modernization is an especially important issue for the RCs. In the past, RC units have been precluded from being mobilized because they did not have the most current model of equipment. This is especially true with aircraft that employ high tech instrumentation for navigation and armament delivery. This shortage of modern equipment is characterized by the term *modernization shortfall*, which addresses a totally different issue from equipment on-hand shortages. The list below highlights some of the modernization shortfalls identified in this report by the RCs.

ARNG

UH-60 Blackhawk Helicopters
M2/3A3 & M113A3 Vehicles
Armored Vehicle Launch Bridge
Medium Tactical Vehicles (FMTV)
Utility Vehicles (HMMWV)
Communication/Digitization

ANG

F-15 A/B Fighter Defense Link
F-15 C/D Engine Upgrades
Stage III Noise Reduction

USAR

CH-47 Helicopters
AH-64D Apache Longbow
Medium Tactical Vehicles (FMTV)
Utility Vehicles (HMMWV)
UH-60 Blackhawk Helicopters

USNR

CH-60 Helicopter
C-40A Transport Aircraft
P-3C Update III Kits
F/A 18A Aircraft
IT-21 Fleet Readiness Infrastructure

USMCR

F/A 18A Aircraft
CH-53E Helicopters
KC 130T Avionics Mods

USAFR

C-130 Avionics Modernization
KC-135E PACER CRAG
C-141 Aircraft Radios

Age and condition of equipment produce more than modernization shortfalls. For example, equipment such as trucks, armored personnel carriers and support equipment are older in many cases than their drivers. They require considerably more maintenance and repair parts as they age. Body metal rusts out, seals begin to leak, and engines fail. Maintenance costs increase and reliability decreases. Services have programmed for replacement vehicles and upgrades, but full replacement of the RC fleets will stretch far beyond the Future Years Defense Plan (FYDP). RCs have initiated service life extension programs and partnered with industry in creative ways to leverage funding for interim solutions. In the meantime, many units must cross-level equipment in order to meet mobilization requirements for deploying units.

VII. Compatibility and Interoperability

According to Joint definitions, *interoperability* is the ability of systems, units or forces to operate effectively together. *Compatibility* is the capability of two or more items of equipment to function in the same system or environment without mutual interference.

Department of Defense policy directs all Active and Reserve units that fight together be equipped with sufficient quantities of compatible and interoperable equipment. Measurement of compatibility between equipment items and systems forms a continuum ranging from non-interoperable and incompatible to identical equipment. Since identical type/model/series equipment is not always affordable, the Services use a variety of approaches to increase compatibility.

The Army groups units into "force packages" with common deployment sequences, and equips these units with the same or highly compatible items of equipment based upon the Department of the Army Master Priority List (DAMPL). The Marine Corps, on the other hand, generally provides compatible equipment to all Active and Reserve units. The Navy and Air Force assign particular missions to Reserve units and provide them with appropriate equipment to complete these missions. Examples of this "mission compatibility" approach are naval mine warfare and air defense of the Continental United States.

Today, equipment incompatibility between Active and Reserve units exists in various degrees. While all Reserve components share a concern for aviation compatibility among the various aircraft type/model/series, there are instances of less than full compatibility. For example, all

Air Reserve component aircraft of the same type/model/series do not have identical modifications and capabilities; however, they still report full mission compatibility. Similarly, older engines in Air Reserve component KC-135 aircraft limit logistics compatibility with aircraft which have upgraded engines; however, in-flight refueling missions are still being flown successfully.

Combat equipment such as tanks, armored personnel carriers, artillery pieces, and individual weapons range from state-of-the-art to older legacy weapon systems. Different generations of the same system may fire different ammunition, require different repair parts inventories, and need different maintenance skills.

Tactical wheeled vehicles are continually undergoing modernization and compatibility improvements in all Reserve components. The oldest vehicle models reside in the Army's Reserve components.

Tactical radios for ground operations in all Reserve components are not fully compatible. When older, single-channel radios are used in the same communications network with new secure radios, effectiveness is reduced in the face of enemy jamming. On a positive note, Air National Guard combat communications and theater air control units are being converted to new digital systems that are fully compatible with Active systems.

Overall, compatibility is gradually improving over time.

VIII. Summary and Conclusions

As stated previously, Reserve component equipment on-hand readiness is slowly but steadily improving. Services are programming larger portions of their procurement budgets for Reserve equipment, and integrating the Reserve components more and more into current operations and plans. Overall, the Total Force Policy of the Secretary of Defense is working.

Despite these improvements, the Reserve components still have challenges that interfere with being fully interoperable and compatible with their Active component counterparts. Modernization shortfalls and aging equipment are a fact of life, and it is expensive to maintain and repair the aging equipment.

The RCs have received approximately $2 billion annually for equipment procurement which has increased equipment on-hand readiness overall. However, the dollar-value of equipment shortfalls continues to rise, especially in the Army, due to the attrition of aging equipment and the influx of new equipment not yet fielded to the RCs.

Chapter 2
United States Army Reserve Components

I. Army Overview

a) Overall Army-wide planning guidance: The National Military Strategy (NMS) of the United States provides strategic guidance to fight and win two nearly simultaneous Major Theater Wars (MTWs). Defense planning directs the Army to program sufficient forces to implement the NMS. Inherent in the Army's ability to support this strategic guidance is the integration of the Active component (AC) and the Reserve components (RC) into a Total Force capable of multiple, synchronous, and compatible missions across the continuum of military operations. Early access to RC combat support (CS) and combat service support (CSS) units is essential to project Army forces to the theater of operations and sustain the operational tempo in the theater(s).

The Army plan places combat forces and various support units into force packages (FP) designed to support the warfighting requirements of the combatant Commanders-in-Chief (CINC). Currently, there are four force packages (FP 1 to 4) and two associated force support packages (FSP) 1 and 2. These force packages are funded by the first-to-fight, first-to-resource methodology that prioritizes programming and resources. These force packages also drive the Department of the Army Master Priority List (DAMPL), Army Acquisition Objective, and modernization plans.

The Army National Guard (ARNG) and the United States Army Reserve (USAR) provide CS/CSS units to the theater of operations through FSPs. FSP 1 is designed to deploy and support 4 1/3 divisions, echelon above division (EAD) and echelon above corps (EAC) units for one Corps, and the support elements to open one theater. This includes those forces essential to support forcible entry operations and the Continental United States (CONUS) support base required for mobilization and deployment. FSP 2 supports the deployment of one additional CONUS division, EAD/EAC for a second Corps, remaining theater support elements for the initial theater, and essential theater opening elements for a second theater. The remaining Reserve CS/CSS units are aligned with strategic force packages based on latest arrival date in the theater of operations.

The AC may require early access to specialized RC units for stability and support operations, for deployment and sustainment operations and for tailored rotational contingency requirements as evidenced in Bosnia.

b) Army-wide Equipping Policy: The Army Equipping Policy (AEP), as stated in a Headquarters, Department of the Army (HQDA) memorandum, provides guidance for equipping all Army units. The AEP addresses modernization force structure and readiness requirements, and provides policy that guides the distribution of equipment throughout the Total Army.

The Army equipping goal is to produce fully equipped and modernized deployable forces capable of performing as components of a unified command or joint task force.

The AEP balances Army readiness against the needs of early deploying units by directing a two-step approach to distribution. First, the Army ensures that all readiness reporting units have sufficient equipment to meet minimum readiness standards. Then, the Army fills unit requirements in first-to-fight/first-to-resource order in accordance with the DAMPL, as amended by Army Orders of Precedence, or approved out of DAMPL sequence fielding to support operational requirements based on unit missions.

c) Army plan to fill mobilization shortages in the RC: During a large-scale mobilization, the Army will employ the most practical and efficient means of redistribution. This includes issue of serviceable warehouse stocks, repair of unserviceable items, procurement and substitution of commercial equipment, cross-leveling of any unit excess equipment left behind by deploying units receiving pre-positioned equipment, unserviceable equipment which can be repaired quickly, including depot work-in-progress, National Inventory Control Point stocks, and new procurement.

Upon mobilization notification, all Army units will update equipment on-hand data on the Continuing Balance System-Expanded. This data, when matched against requirement documents by material management centers, will highlight equipment shortages and excesses. Orders for lateral transfer and material release orders will then be issued. Each level of command will perform redistribution from within its own resources before forwarding unfilled requirements to the next higher echelon. HQDA will issue prioritization guidance for all AC and RC units based on the needs of the warfighting CINCs, with consideration for modernization, interoperability, and readiness.

The Army's plan to fill shortages within a mobilizing unit would follow this path:

- Alerted unit's RC would attempt to cross-level within its units.
- Major Area Command would attempt to locate resources.
- DA would either release stocks from depot assets or direct distribution of assets via out of DAMPL sequence fielding.

d) Current Army initiatives affecting RC equipment: General Eric Shinseki, Army Chief of Staff, has restated the Army's Vision: "Soldiers on Point for the Nation… Persuasive in Peace, Invincible in War." As this vision evolves, the Army will transition to a lighter, more mobile force. As force structure, doctrine, technology, and equipment evolve in support of this vision, the strategies associated with equipping the Reserve components will likewise change. These impacts will be addressed in future reports. Below are a few on-going initiatives impacting the total Army.

(1) Multi-Component Units: Multi-component units combine personnel and equipment from more than one component on a single authorization document. The intent is to maximize integration of Active and Reserve component resources. Multi-component units have unity of command and control similar to single component units. Multi-componency does not change a unit’s doctrinal requirement for personnel and equipment. The ultimate decision for selecting a unit as multi-component is based on mission requirements, unique component

capabilities and limitations, readiness implications, efficiencies to be gained, and the ability and willingness of each component to contribute the necessary resources.

The Army established multi-component units as a result of Total Army Analysis (TAA) 2005, the Army's biennial review of force structure. Multi-component units can be composed of any combination of AC, ARNG, or USAR elements. The parent unit or "flag" can be either an AC or RC element.

Equipment requirements will normally be documented in the component that owns the flag of the multi-component unit. In FY 1999, the Army established twelve multi-component units. Of the twelve units, seven had USAR elements and two had USAR flags. The National Guard had elements in seven of the multi-component units and two ARNG flags.

An additional forty-five multi-component units are documented through FY 2001. The USAR will have total of forty elements and ten flags. The ARNG will have a total of fourteen elements and two flags.

(2) Revolution in Military Logistics (RML): The RML is on-going within the Army. The Army continues its transition from a supply-based system to a distribution-based logistic system that capitalizes on the synergies of information supremacy, situational awareness, and distribution agility.

RML programs impact on all aspects within the Army: doctrine, training, leadership, organizations, materiel and soldiers. It is an investment strategy that will provide the framework for the transformation to a distribution-based system to support the Army of 2010.

(3) Army National Guard Division Redesign Study (ADRS): The Secretary of the Army approved the ADRS plan to convert twelve ARNG combat brigades and slice elements to required CS/CSS structure. The plan will convert approximately forty-eight thousand personnel assigned to combat force structure to CS/CSS force structure by FY 2009. A force feasibility review confirmed the conversions recommended by the TAA 05 Resourcing Conference Council of Colonels. ADRS is included in all Force Validation Committee reviews. Approximately $2 billion has been programmed to resource the ADRS plan in the current budget. Additional resources will need to be identified and applied in future budgets to complete major procurement by FY 2007 and complete ADRS conversions by FY 2009.

4) Division XXI: Force XXI is the process to build America's Army for the 21st Century. Army XXI is the near term product of Force XXI. The digitization of III Corps is an interim step to Army XXI. As part of this process, the Army has redesigned the heavy division, Division XXI. These divisions as well as the Corps will include RC elements from the ARNG and the USAR. Current Army plans call for a RC slice in each division of approximately 515 soldiers, and provide Army battle command systems such as the Maneuver Control System (MCS) and Force XXI Battle Command Brigade and Below appliqué to these divisions and corps slice elements.

e) Army plan to achieve full compatibility between AC and RC: The Army maintains a doctrinally integrated series of organizational designs for the purpose of achieving operational

compatibility between types and echelons of units. Every effort is made to equip and modernize the AC and RC so that they remain an integrated team. Because of funding shortfalls, incremental improvements have been established based on the first to fight/support principle.

The trend over the over the years was positive because National Guard & Reserve Equipment Appropriation (NGREA) funds were used to reduce equipment shortages in high priority units when Army procurement money was exhausted. However, the trend in recent years is one of decline in NGREA funds. The Army, however, has budgeted more in their annual budgets for the RC, and Congress has added more money to active accounts for Reserve specific equipment. Despite these increases, the RC still has numerous equipment shortages, especially in the most modern equipment. Consequently, the RC must increasingly rely on partial overhaul and rebuild programs of existing equipment to retain mission capabilities.

Since FY 1997, the ARNG and USAR procurement has been included in the FYDP. This ensures visibility of funds for improvements in equipment compatibility between the AC and RC.

f) Equipment on Hand (EOH) Substitutes: The equipment on hand in *Table 1* includes "Authorized Substitutes." Substitute line item numbers (LIN) are reported as assets on hand, and are included in equipment totals for unit status reporting purposes. Army regulations describe authorized substitutes as any piece of equipment that is able to perform the same function and purpose as the authorized LIN. If substitute items of equipment are used, they are listed along with the quantity and item substituting for the prime LIN in *Table 7*.

Having an authorized substitute LIN as on-hand equipment does not exempt the unit from having the authorized LIN on a valid requisition. Therefore, the requirement for the authorized item is still valid. Inclusion of authorized substitutes tends to skew the shortages of primary LINs, but depicts a more accurate picture of equipment available for mobilization. Without the use of authorized substitute equipment, the Army's equipment posture (both Active and Reserve) would be degraded and the value of equipment shortages would increase.

As a point of reference, if authorized substitutes were included in the total dollar-value of equipment on-hand calculations, the actual equipment shortages as depicted in *Chart 3*, Chapter 1, page 1-4, would be reduced from $6.9 billion to $6.1 billion for the ARNG, and from $1.3 billion to $1.1 billion for the USAR. Consequently, the dollar-value of substitute equipment for the RCs is approximately $900 million.

II. Army National Guard Overview

a) Current Status of the Army National Guard (ARNG)

(1) General Overview: The Army's long-term strategy to ensure the ARNG is equipped to be mission ready and compatible with the Active component (AC) revolves around four cornerstones:

- Redistribution/cascading of equipment from the AC to the ARNG
- Re-capitalization through smart management initiatives
- Army procurement for the ARNG (P1-R Exhibit to the Budget)
- Congressionally mandated National Guard and Reserve Equipment Appropriations (NGREA).

These cornerstones reinforce the seamless equipping/modernization strategy of the Army Equipping Policy, the Army Modernization Plan and the Army Plan. However, there is a long way to go before the ARNG can achieve the degree of parity in combat, combat support and combat service support (CS/CSS) systems required to fully support the Army Modernization Plan and the National Military Strategy. For example, the ARNG needs an additional nineteen Paladin howitzer battalions, M2/3A2ODS configuration upgrades to the Bradley Fighting Vehicles, and upgrades to the M1A1 Abrahms tank, as well as modernization initiatives for its aircraft, in order to ensure component compatibility with the AC.

The AC and the ARNG are rapidly moving ahead on several integration fronts, including the AC/ARNG integrated divisions, the Army National Guard Division Redesign Study (ADRS), and AC/ARNG Division Teaming.

Chart 1 below depicts the current readiness posture of the ARNG by comparing the percentage of primary authorized equipment with the percentage of authorized substitute equipment and the remaining shortfall.

Chart 1
Equipment On-Hand Readiness of ARNG Major Units

TYPE UNIT	AUTH ON HAND	AUTH SUBS	SHORTAGE
Force Support Package (FSP)1/2	87%	10%	3%
Enhanced Separate Brigade (eSB)	93%	7%	0%
Divisions	78%	9%	13%
CS/CSS EAD UNITS	83%	11%	6%
Mission Essential Eq (ERC A & P)	64%	11%	25%

The high percentage of authorized substitutes for equipment readiness code (ERC) P & A items (mission essential equipment) reflects the challenges of modernization. In each of these cases, the substitute item reduces the units' compatibility with their AC counterpart. In addition, substitute equipment is often near, at, or past its economic useful life (EUL). It requires intensive maintenance efforts, increases operations and sustainment costs, and

reduces training effectiveness and overall readiness of equipment. Substitutes do, however, improve equipment on-hand readiness.

Table 7 depicts a more complete picture of equipment substitution. Some specific examples from *Table 7* include:

- Commercial Utility Cargo Vehicle (CUCV) for High Mobility Multipurpose Vehicle (HMMWV)
- 5 ton Trucks for Heavy Expanded Mobility Tactical Truck (HEMTT)
- M113 Armor Personnel Carriers for M2/3 Bradley Fighting Vehicles
- AN/VRC-12 Radios for SINCGARS
- Gas Generators for Diesel

(2) Status of Equipment

(a) Equipment On-Hand (EOH): (The data in *Table 1* contains EOH and authorized substitutes.) The ARNG currently has 13 percent of its units that do not meet readiness levels for equipment on-hand. The major shortages preventing these units from achieving higher readiness levels are trucks, trailers, radios, and associated communications devices, generators, support equipment, and test, measurement and diagnostic equipment, video/camera equipment, medical sets, and night vision devices.

(b) Average Age of Major Items of Equipment: Current programs are slowly modernizing our wheeled vehicle fleets, but the resources needed to meet all requirements are lacking. The result of this dilemma is that tactical vehicle programs are routinely cut in favor of higher priority requirements. The consequence of this is that the fleets continue to age at a faster rate than they are modernized. Maintenance costs continue to increase and improvements stagnate. Although exceptional work has accelerated the modernization of the wheeled fleets by about five years, it will still be FY 2017 before the last of the aged medium wheeled vehicle fleet (2 ½ and 5 ton) is replaced by the Family of Medium Tactical Vehicles (FMTV). At that point the first fielded FMTVs will reach the end of their expected vehicle life and the cycle will repeat.

Re-capitalization is a method of modernizing equipment. The ARNG is currently working with the Army on an initiative to refurbish portions of the tactical wheeled vehicle (TWV) fleet. This program would fund all costs of the TWV depot maintenance program with the goal of bringing selected vehicles back to their original capability, and reducing operations and maintenance costs. This program also would help bridge the gap until new procurement funding is available to replace the vehicles.

Portions of the TWV fleet are becoming less reliable. A large percentage is at or will soon pass the R3 point. (The R3 point is based on engineering data that predicts the point in time when it is economically advantageous to retire an item, replace it with a new one, or rebuild it to current production configuration. It is also an indicator that sustainment costs will increase in the future.) One third of the ARNG light vehicle fleet of CUCVs is R3, 97 percent of the 2 ½ ton fleet is R3, and 56 percent of the 5-ton fleet is R3. Unfortunately, current operational readiness rates do not indicate the level of effort needed to sustain an item or

predict its failure rate during sustained operations. Consequently, the light fleet shortcomings need to be addressed now to prevent problems with the 2 ½ ton fleet in the future. Fortunately, in the heavy fleet, the Heavy Expanded Mobility Tactical Truck (HEMTT) is the only area that needs more emphasis. All other heavy fleet modernization plans are being executed.

Since the Army decided to pure-fleet (field the same model of equipment in a given unit), the ARNG has less than 1 percent of the 5 ton vehicles and 2 percent of the 2 ½ ton vehicles of the new FMTV series. The remaining 97 percent are the older M900, M800, M246, M62, M55, M54, M52, M35, and M109 models. Fielding of the FMTV will not be complete until FY 2017. The ARNG staff continues to work with the Army staff to modernize this fleet and address the retirement of obsolete vehicles. As the Army concept becomes more of a reality, the ARNG should feel the effects of receiving equipment more on pace with its Active counterpart.

The 2 ½ ton truck fleet is over-aged. Although over 1,600 Extended Service Program (ESP) rebuilt 2 ½ ton trucks have been delivered, the average age of this fleet is still over 25 years. The ARNG has 15,043 of the M35, M35A1, and M35A2 2 ½ ton vehicles in its fleet.

HMMWV shortages are currently being filled with obsolete CUCVs. The inventory of HMMWVs is increasing, but force modernization changes have caused the delta in this requirement to increase. The ARNG requires a total of 37,460 HMMWVs (all variants) with 29,834 on hand. This reflects a 79 percent level of fill.

The requirement for the HEMTT in all variants is 5,143. The equipment on-hand quantity for this series is 3,820, which is a 74 percent level of fill. The current requirement for HEMTT fuel tankers is 2,099. There are 1,312 fuel tankers on-hand, which is 62 percent of the wartime requirement. Fuel, both on the battlefield and in support of national disaster relief efforts, continue to be a major requirement. The HEMTT fuelers meet the increased fuel consumption requirements of modernized ARNG combat units.

(c) Compatibility of Current Equipment with the AC: Numerous ARNG systems pose compatibility challenges, which are creating operational and logistical support issues that need to be remedied.

1. Weapons and Tracked Combat Vehicles: The Army's modern tank is the M1A1 and M1A2 Abrams. The ARNG currently has a mix of M1, M1IP, and M1A1 tanks which create logistical challenges because of different requirements for repair parts, ammunition, and maintenance skills. Consequently, deployment with AC units would cause significant compatibility/interoperability concerns. The Army's ultimate objective is to bring all ARNG units to an end state of a pure M1A1 tank fleet; however, based on current procurement levels, this desired end state is not in sight. The interim objective is to pure-fleet all ARNG Divisions with one type tank.

The two Bradley Fighting Vehicle models currently in the inventory require two different repair parts inventories, special tools and test equipment unique

to each model, plus different maintenance skills. In addition, the basic Bradley Fighting Vehicle model will not fire the TOW II missile; thus, two types of TOW missile inventories are required. This situation creates an operational concern in the event of mobilization and deployment. The majority of the M113 family of armored personnel carriers, specifically the A2 version, is not operationally compatible with M1 Abrams tanks and Bradley Fighting Vehicles. The M113A3 is a product-improved version of the M113A2 with an improved transmission and engine, which enables it to stay abreast of the M1 Abrams tank and Bradley Fighting Vehicle in all but the most severe terrain. Additional improvements include improved driver controls, fragmentation liners, external fuel cells and provisions for installation of an external armor kit. Given the fact that the Army has no plan to upgrade all M113 Family of Vehicles to the A3 version, serious incompatibility issues remain if deployed with the Abrams tank.

Without upgrades, the ARNG Armored Vehicle Launch Bridge (AVLB) cannot provide Abrams assault forces with required mobility and bridge crossing capabilities. In order to compensate for the additional 10-ton weight of the Abrams tank the overall span of the AVLB was shortened by 4 meters (18 meters to 14 meters), which reduces capability and increases mobility restriction on supported armored forces.

2. Tactical and Support Vehicles: Although the ARNG continues to receive new and cascaded vehicles to maintain its fleet, it continues to have old equipment that is expected to perform to the standards of the newer equipment in the AC. As the ARNG continues its partnership with the AC on deployments to South West Asia, the Balkans, Training Centers, and other "hot spots" in the world, it has to steadily shuffle equipment within the ARNG to insure it can meet mission requirements. Occasionally, vehicle density lists have to be adjusted. The AC generally provides the support requirements for the deployed ARNG units and may not carry the authorized stockage lists of repair parts to sustain the older equipment. Subsequently, local purchase may not be an option and parts have to be requisitioned and shipped from home station. The time lag associated with this process poses a problem for commands.

CUCVs fill a significant shortage of HMMWV requirements. The CUCV is on the Army's tactical wheeled vehicle retirement program while filling 21 percent of the HMMWV requirements in the Guard. The capability of the CUCV in all variants can not match that of the HMMWV.

Much of the tank transport capability has moved to the National Guard. Although the AC has replaced most of its Heavy Equipment Transport (HET) with the new M1070/M1000 systems, the Guard continues to use over 265 of the older M911/M747 systems, which do not meet the 70 ton M1A1 Tank weight requirements.

There is a similar problem with the use of 2 ½ ton and 5 ton cargo trucks as substitutes for HEMTT cargo trucks. The HEMTT cargo truck has a cross-country payload of 22,000 pounds, while a 5 ton truck has a limit of 10,000 pounds cross-country and the 2 ½ ton truck has a maximum payload of only 5,000 pounds. This deficiency could produce significant operational shortfalls in the event of mobilization.

With the increased number of medium truck companies (M915 Truck Tractors) and the fielding of the Palletized Load System (PLS), a new incompatibility problem arises. The proper recovery vehicle for heavy truck recovery is the 10 ton wrecker. However, the Guard currently has only 53 percent of its required HEMTT wreckers and 15 percent of its FMTV wrecker. Units must continue to use the 5 ton wrecker as a substitute. This substitute decreases the efficiency of recovery operations due to decreased capability and mobility, and presents significant safety concerns in many situations.

3. Communications and Electronics Equipment: The ARNG currently does not have the Enhanced Positioning Location Reporting System (EPLRS). A Congressional "Plus-up" in the FY 2000 Appropriations Bill provides funding for EPLRS which is scheduled to provide some systems for the ARNG. EPLRS significantly enhances the commander's position awareness and provides the data link necessary for other digitization systems. Employing units without EPLRS along side units equipped with EPLRS adds significant complexity to battlefield operations and may lessen a commander's ability to exploit an enemy weakness. It therefore creates a significant interoperability issue if deployed with the AC.

ARNG units are still equipped with the older AN/VRC -12 series FM radios which degrades Communications Security (COMSEC) and Operations Security (OPSEC) of the entire force. Units equipped with the newer SINCGARS radio must switch off the channel-hopping feature of their radios to communicate with units equipped with the VRC-12 series. This negates the advantage of SINCGARS.

This incompatibility also impacts logistics in the theater support structure in the following ways:

- The theater has to support both SINCGARS and the older generation FM radios.
- Units must stock spare parts for both systems at all levels of maintenance to replenish depleted Prescribed Load Lists.
- The mix of old and new requires additional repair skills for maintenance personnel assigned to the theater.
- Additional warehouse space to store two different sets of spare parts.
- Higher failure and repair frequencies of the older systems.

(d) Maintenance Programs: The following are current ARNG Depot Maintenance Programs:

- AMC-TMDE Calibration Program: Provides calibration support to State technicians who are unable to perform the specified calibration.
- CECOM: Provides calibration of all radiac equipment and clean up of radiological accidents.

- USAMMA: Provides calibration of medical equipment within the States.
- AMCOM: Provides calibration of special test equipment for the Dragon Missile system.
- CECOM: Provides direct exchange of communication equipment for the States, including CLSP-C, MSE, CLSP-OR, NVG programs.
- AMCOM: Provides repair of all missile related components required by ARNG Missile units.
- AMCOM: Provides repairs for the Stinger System.
- DMRPM SUPPORT: Calibration/ARS support.
- McClellan ALC: Provides work on the Firefinder system through the Air Force Logistics Center.
- ACALA: Provides for all weapons and Howitzer repairs.
- ATCIN/FT SILL: Provides for the repair of all PADS related equipment.
- TACOM: Provides depot support to evaluate the Combat Vehicle Fleet with in the State.
- TACOM: Provides repair of any combat vehicle found by the CVE team in need of repair, including the FIST-V and M1.
- TACOM: Provides for rebuild of the major end items such as the M2 Bradley Fighting Vehicle, M88A1, and M60 AVLB.
- TACOM: Provides for rebuild of the D7F Dozers and MGB systems.

The ARNG depot maintenance program is based on a "repair and return to user" premise. Army National Guard equipment is repaired to deployable standards and returned to the owning units. The ARNG does not have an equipment maintenance float.

The ARNG Depot Maintenance Program is funded at 77 percent of its total requirement for FY 2001. Funding for Early Deploying units, to include the enhanced Separate Brigades, is 80 percent of total requirements. Funding for late deploying units is 74 percent of total requirements.

Management Decision Package (MDEP) AMAE (Aircraft) is funded at 80 percent of requirements in FY 2001. Remaining ARNG MDEPs are funded slightly lower than 80 percent of total requirements. MDEP AMCE (Communications-Electronics Equipment) is funded at 78 percent of total requirements and MDEP AMWE (Combat Vehicles) is funded at 76 percent of total requirements. MDEP AMME (Missiles) is funded at 61 percent of total requirements; MDEP AMTE (calibration, construction engineering equipment, weapons/armament, watercraft, and general equipment) is funded at 72 percent of total requirements.

ARNG maintenance sites grew out of a successful program to assist the Army in recovering equipment returned to the Continental United States (CONUS) from Operation DESERT STORM and the downsizing in Europe (RETROEUR). Under these

programs, the Army paid the ARNG to refurbish equipment for eventual redistribution to the Army. Now, with these programs completed, the ARNG decided to continue their success by including ARNG equipment and cascaded Army equipment destined for the ARNG into these programs. Some of this equipment, particularly the tactical truck fleet, will not be modernized with the latest systems for ten or more years, with most of these trucks already in use for last 15-20 years. Consequently, there is a need to refurbish these vehicles and restore them to some sort of reliability for our soldiers.

(e) Modernization Shortfalls

1. Aviation: Modernization of the utility helicopter fleet continues with intensive monitoring at the national level. Procurement of UH-60Ls for AC units will release additional UH-60A aircraft for redistribution to ARNG in future years.

2. Weapons and Tracked Combat Vehicles: The M113 Family of Vehicles will remain in the ARNG force structure well into the 21st century. Configurations include the M113A2 and A3 Armored Personnel Carrier, the M577 Command Post Carrier, the M981 Fire Support Team Vehicle, the M1059 Smoke Generator Carrier, and the M901 Improved TOW Vehicle. The majority of vehicles in the M113 family are the older A2 version, which substitutes for the newer M113A3 requirement.

The ARNG has a current requirement for Armored Vehicle Launched Bridges (AVLBs). The AVLB upgrade program, Wolverine Heavy Assault Bridge, is currently unfunded and has become a bill payer for the CSA's transformation strategy. Without this upgrade, the ARNG can not meet the AC requirement for mobility and bridge crossing capability required by the AC Abrams tank assault force. The ARNG AVLBs are mounted on the old M60 tank chassis which does not have the mobility characteristics necessary to meet the requirements of the current AC tanks.

Avenger support equipment, necessary to achieve maximum capability for the Avenger Battalions, is slower in fielding due to funding limitations. Among the delayed items are the Forward Area Air Defense Command and Control System (FAADC2), Sentinel ground based sensors, EPLRS, and the family of Single Channel Ground-Air Radio Systems (SINCGARS) communications equipment. The ARNG is scheduled to activate the first Avenger Battalion as a part of the ADRS in FY 2004.

3. Tactical and Support Vehicles: The FMTV fielding to modernize the current 2 ½ ton and 5 ton fleets will not be completed until FY 2017. Units will continue to use the cascaded vehicles from the AC and limited new procurements to outfit the Force Package (FP) 1 and 2 units, while taking older equipment and moving it to the FP 3 and 4 units.

The completion date for fielding the HMMWV fleet is projected to extend past FY 2007. This will continue to pose a problem as the Army continues to place more requirements on this vehicle. Although most requirement documents authorize the M998 version model, a greater future need will be for the M1097 and M1114 versions. Since the Guard is

critically short of the M1097 and M1114 versions, the M998 and M1037 will need to be used as substitutes. Additionally, units with CUCVs as substitutes for HMMWVs pose a deployment problem because CINCs do not have maintenance capabilities for these vehicles.

The M1070/M1000 HETS meet the transportation requirement for heavy vehicles and equipment on the battlefield. The ARNG has a significant requirement for these modern 70-ton capacity systems, and is currently at a 62 percent for the M1070 and M1000 authorizations. Additional systems are programmed for the three HET companies to meet the TAA 03 requirements. The remaining HETS requirement for divisional units will be met with distributions in FY 2005/2006. Units with the older M911 system cannot transport the M1A1 Tank.

The primary medium transport system in the ARNG remains the M915 truck and the M871, 40 foot, 22 ½ ton trailer. However, the average age for the M915 fleet is 15-19 years, and the Guard is critically short M871 and M872 trailers. Currently, the Guard is at 53 percent of required for M871 trailers and 79 percent for M872 (34-ton) trailers. The ARNG still uses 681 of the M127 (12-ton) model trailers to fill M871 and M872 authorizations. Currently, there is no projected "get well" date. The AC also has significant shortfalls with these trailers. Overall, 85 percent of the ARNG trailer fleet is obsolete or R3.

As the Army places more dependence on transportation systems to move critical equipment on the battlefield, the PLS Systems in the ARNG have become more important. The Guard is currently at 71 percent authorized fill for the M1075 and 74 percent for the M1074. The anticipated completion date for fieldings is FY 2005/2006.

4. Communications-Electronics Equipment (C-E): Many ARNG combat units have assumed an increasingly larger role in support of contingency operations, but several C-E compatibility concerns remain unresolved. For example, AC combat units are currently receiving EPLRS to provide the commander with situational awareness and aid in the effective integration of the five battlefield functional areas on today's modern digital battlefield. The Army's fielding plan is to field the first Digitized Corps (III Corps) by FY 2004 which includes two ARNG Avenger Battalions with 97 EPLRS each. The ARNG's next priority for EPLRS would be to field three Avenger Battalions (97 each), which are FSP units in support of the 18th Airborne Corps. Fielding details for EPLRS to the ARNG are still being developed.

The ARNG is short Night Vision Goggles (NVG) for both air and ground units. The current inventory represents only 25 percent of the ARNG requirement for NVGs. This shortage adversely impacts a unit's ability to train for and conduct night operations. The older PVS-5 NVG, used as substitutes for the PVS-7Bs NVG, are inadequate and limit a unit's capability to maneuver under the cover of darkness with the same agility as PVS-7B equipped units.

(f) Equipment Readiness: The Army continues to modernize the RC according to the first-to-employ principle to ensure that early deploying AC and RC units are compatible and interoperable. Converting combat structure to necessary CS/CSS units will continue to need annual funding to produce a converted and modernized force. The Army has

strengthened and accelerated its RC modernization program through the AC/RC integration initiative, which receives its primary thrust from the ADRS. Availability of CS/CSS equipment is especially important when considering a major force structure decision such as ADRS. The ARNG, in concert with the Army, is looking across all resource opportunities in a proactive and aggressive manner to ensure it has the capability to meet operational and training needs. ADRS will not fill current equipment shortages in other non-ADRS related units.

The Army confirmed its commitment to ADRS and other unresourced required force structure (COMPO 4) reductions, by allocating at least $2.1 billion for equipment and training in the Future Years Defense Plan (FYDP) for FY 2001-2005. These funds will procure equipment for Phase 1 of ADRS (three brigade conversions), Phase 2 (three brigade conversions), and begin procurement for Phase 3 (three brigades and one division slice conversion). The Army continues to evaluate requirements for ADRS-related military construction, environmental projects, sustainment, and manning.

The ARNG will convert 24 brigades to the limited Division XXI design by FY 2002, which will mirror the AC. At the same time, the ARNG recognizes an opportunity to modernize itself at a faster rate with M1A1 Abrams tanks and M2 Bradley Fighting Vehicles made available from the conversion of the AC and ARNG units. It is the goal of the ARNG to achieve interoperability with its AC counterparts. The Army, under the Army Chief's of Staff new vision, will begin converting heavy and light brigades to a medium wheel configuration starting in FY 2001. The conversion of Army brigades under this new vision will provide the opportunity to cascade modernized heavy brigade equipment directly to the ARNG.

(g) Other Equipment Specific Issues: For many years the primary source of newer equipment for the ARNG came from cascaded equipment from the AC, but the Army does not have a formal long range plan for the cascading of equipment. However, individual project managers of combat vehicles often have informal plans identifying what models or series of equipment will be transferred. Cascaded equipment is required to be transferred in usable condition (commonly referred to as 10/20 standard); however, the fact is that equipment is rarely transferred in 10/20 standard, except for combat equipment such as tanks and Bradley fighting vehicles. The primary reason is AC funding. Consequently, equipment is often accepted by the ARNG in less then 10/20 standard in order to increase equipment on-hand readiness of ARNG units. This creates equipment readiness concerns due to the maintenance problems, and requires new training based upon different models of equipment entering ARNG units.

An additional challenge to the ARNG is that the AC does not train military occupational specialties (MOS) on older systems. The ARNG must provide training itself for mechanics and operators of older equipment, while these personnel lose proficiency on more modern equipment. Support units that do not train and support modern equipment in peace time will not be proficient if deployed in support of units with modern equipment.

The National Guard Bureau was very successful in developing a software to automate the processes that were not incorporated into the Standard Army Retail Supply System Objective (SARSS-O), but were needed to effectively manage asset disposition. This new software provides ARNG Class VII (major equipment end items) item managers an

automated interface with States/Territories operating SARSS-O. The program is called Objective Supply Capability Adaptive Redesign. The software is very effective in identifying excess equipment and making it a candidate for redistribution or turn in as excess.

b) Changes Since Last NGRER: As mentioned earlier, NGREA dedicated procurement funds have worked well to increase the readiness of the ARNG beyond the affordability limits of the Army's Total Obligation Authority. Even with the increase in Army procurements, the ARNG has a long way to go to recover from the effect of budget decreases during the last ten years. The NGREA funding has been critical to the ARNG to increase readiness, such as procurement of mission required equipment (ERC B) that do not surface at the major end item level. The ARNG also uses NGREA to fund essential training equipment and safety enhancement items.

Chart 2
ARNG DECLINING BUDGET

FISCAL YEAR	NGREA ($M)	P-1R ($M)	TOTAL
FY 89	256.0	1,180.0	1,436
FY 90	331.8	1,916.2	2,248.0
FY 91	805.7	860.2	1,665.9
FY 92	344.2	626.2	970.4
FY 93	399.2	686.0	1,085.2
FY 94	193.4	979.4	1,172.8
FY 95	120.9	594.4	715.3
FY 96	100.1	780.2	880.3
FY 97	100.8	754.4	855.2
FY 98	68.8	430.6	499.4
FY 99	20.0	825.0	845.0
FY 00	29.8	839.2	869.0
FY 01	TBD	884.2	TBD

c) Future Years Program (FY 2001- 2003)

(1) FY 2003 Equipment Requirements: *Table 1* indicates equipment requirements by equipment number and nomenclature for FY 2001 through FY 2003, and compares them to the wartime required quantity in FY 2003. *Table 3* indicates the planned procurements through FY 2003. The information in *chart 3* below extracts the shortfall from the ARNG's top procurement priorities for FY 2001-2003.

Chart 3
ARNG PROCUREMENT SHORTFALL PRIORITY LIST

ITEM	FY 2001		FY 2002		FY 2003	
	QTY	COST	QTY	COST	QTY	COST
PALADIN M109A6	72	222.00	72	222.00	0	0.00
FAASV	72	97.00	72	97.12	0	0.00
BRADLEY FIGHTING VEHICLE SERIES MOD	123	135.30	123	135.30	115	62.30
M1A1D MOD	0	0.00	54	9.72	54	9.72

	FY 2001		FY 2002		FY 2003	
	QTY	COST	QTY	COST	QTY	COST
ARMY DATA DISTRIBUTION SYSTEM	0	0.00	123	1.23	123	1.23
SINCGARS BUYOUT	6100	70.00	0	0.00	0	0.00
BLACK HAWK	8	80.00	8	80.00	8	80.00
UH-1 SUSTAINMENT	40	72.00	40	72.00	40	72.00
AVENGER	5	13.69	14	34.68	24	60.89
MEDIUM TACTICAL VEHICLE	260	37.52	302	43.55	232	33.43
APACHE AH-64A (ARNG FIELDING)	6	75.60	6	75.60	6	75.60
MULTIPLE LAUNCH ROCKET SYS (MLRS) SPT EQ		28.10		7.93	0	0.00
MLRS LAUNCHER	19	104.42	19	106.55	19	108.85
TRACTOR FULL-TRACKED LOW SPEED T9	44	12.50	37	10.55	0	0.00
ROLLER VIBRATORY	110	6.67	57	3.71	0	0.00
ARMORED VEH LAUNCH BRIDGE (AVLB) SLEP BLK 1	45	4.85	50	5.35	63	6.85
AVLB	83	16.60	83	16.60	83	16.60
GRADER, MTZD HEAVY	65	18.40	46	13.02	43	12.17
ALL TERRAIN LIFTER, ARMY SYSTEM (ATLAS)	20	2.43	24	2.56	25	2.85
LIGHT MEDIUM TACTICAL VEHICLE	160	26.72	160	26.72	160	26.72
M9 ACE COMBAT EARTH MOVER & UPGRADES	85	51.53	82	56.15	36	2.16
STRIKER	11	13.18	125	28.70	85	19.00
AN/PVS-7D	3571	10.00	2500	7.00	0	0.00
TRUCK UTILITY HEAVY VARIANT (HMMWV)	160	9.44	160	9.44	160	9.44
TRUCK CARGO, 5700 GVW (HEMTT CARGO)	174	21.48	0	0.00	0	0.00
3KW DSL GENERATORS	435	4.79	477	5.25	414	4.55
TOTAL		**$1,134.21**		**$1,070.72**		**$604.36**

(2) New Equipment Procurements: The new equipment projected procurements are reflected in *Tables 3* and *4*.

(3) Transfers from AC to RC: The implementation of the Army Chief's of Staff vision to convert light and heavy brigades to a interim medium wheel configuration is expected to cascade modernized equipment directly to the ARNG. This transfer will accelerate the elimination of obsolete heavy combat and support systems, and hasten the pure fleeting of modernized equipment.

(4) Withdrawals from RC Inventory: See *Table 5*. As indicated above, the implementation of the Chief's of Staff vision will hasten the ARNG's ability to withdraw obsolete and/or excess equipment from their inventory. The chart below indicates some of the select systems the ARNG needs to replace through modernization.

Chart 4
EQUIPMENT REQUIRING A MODERNIZED REPLACEMENT

NOMENCLATURE	REPLACEMENTS	QTY O/H
2 ½ TON TRUCKS	LMTV	15,443
5 TON TRUCKS	MTV	1468
CUCV (LIGHT 4X4)	HMMWV	12,356
M1 TANK	M1A1 TANK	1457

NOMENCLATURE	REPLACEMENTS	QTY O/H
M2/3 BRADLEY FIGHTING VEHICLE	M2/3A3	1091
M113 ARMORED PERSONNEL CARR	M113A3	1325
M102 105MM HOWITZER	M119	320
HEAVY EQUIP TRUCK	M1070 HET	543
UH-1 HELICOPTER	UH-60L	621
AH-1 ATTACK HELICOPTER	AH-64	352
PVS-5 NIGHT VISION GOGGLES	PVS-7B & 14	21,313

(5) Equipment Shortages and Modernization Shortfalls: The projected equipment shortfall for the out years is projected in *Table 1*, as well as C*hart 4* above. Using current equipment requirements for FY 2000, *Chart 5* depicts the major current ARNG modernization shortfalls.

Chart 5

CURRENT ARNG EQUIPMENT MODERNIZATION SHORTFALLS

NOMENCLATURE	SHORTFALL
M113A3 VARIANTS	2315
M2A2 & M3A3	1772
ARMORED VEHICLE LAUNCHED BRIDGE (AVLB)	436
M9 ACE	642
D7 BULLDOZER	467
SHOP SET CONTACT TRK (ENG)	140
TOW TEST SET	33
ALARM, CHEMICAL	9640
M88A1 MED RECOVERY VEHICLE – TRACK	126
HMMWV VARIANTS	9389
SEMITRAILER M871 22 ½ TON	2526
TRK 8X8 HEMTT WRECKER (M984)	460
TRK 8X8 HEMTT 2500 GAL TANKER (M978)	1008
5 TON TRACTOR MTV TRAC (M1088)	4956
GRADER, MOTORIZED HEAVY	364
PVS-7B NIGHT VISION GOGGLE	104,078
TVS-5 NIGHT VISION GOGGLE	9675
MODULAR COMMAND TENTS	6645
LIGHT MAINTENANCE ENCLOSURE	2006
MODERN BURNER UNITS	6176
HMMWV CONTRACT TRKS (MAINT & EOD)	1106
METEROLOGICAL MEASURE UNIT	28
SINCGARS	5664
CRASHWORTHY CH47 FUEL CELLS	157
ROLLER VIBRATORY	64
SEMITRAILER 34T (M872)	91
TRUCK, ENGINEER, TRACTOR VARIANT	843

(6) Effects on Overall Readiness: ARNG current concerns include the following:

(a) Weapons and Tracked Combat Vehicles: The Army's modern tank is the M1A1 and M1A2 Abrams. The ARNG currently has a mix of M1, M1IP, and M1A1 tanks which create logistical challenges because of different requirements for repair parts, ammunition, and maintenance skills. Consequently, deployment with AC units would cause significant compatibility and interoperability concerns. The Army's ultimate objective is to bring all ARNG units to an end state of a pure M1A1 tank fleet; however, based on current procurement levels, this desired end state is not in sight. The interim objective is to pure-fleet all ARNG Divisions with one type tank. Additionally the M1A1 and M1A2 fires a 120mm tank round versus the 105mm tank round of the M1 which creates ammunition compatibility concerns.

The two Bradley Fighting Vehicle models currently in the inventory require two different repair parts inventories, special tools and test equipment unique to each model, and different maintenance skills. In addition, the basic Bradley Fighting Vehicle model will not fire the TOW II missile, and therefore requires two types of TOW missile inventories. This situation creates an operational concern in the event of mobilization and deployment.

The majority of the M113 family of armored personnel carriers, specifically the A2 version, is not operationally compatible with M1 Abrams tanks and Bradley Fighting Vehicles. The M113A3 is a product-improved version of the M113A2 with an improved transmission and engine, which enables it to stay abreast of the M1 Abrams tank and Bradley Fighting Vehicle in all but the most severe terrain. Additional improvements include improved driver controls, fragmentation liners, external fuel cells and provisions for installation of an external armor kit. Given the fact that the Army has no plan to upgrade all M113 Family of Vehicles to the A3 version, serious incompatibility issues remain if deployed with the Abrams tank.

Without upgrades, the ARNG Armored Vehicle Launch Bridge (AVLB) cannot provide Abrams assault forces with required mobility and bridge crossing capabilities. In order to compensate for the additional 10-ton weight of the Abrams tank, the overall span of the AVLB was shortened by 4 meters (18 meters to 14 meters), which reduces capability and increases mobility restriction on supported armored forces.

(b) Tactical and Support Vehicles: Although the ARNG continues to receive new and cascaded vehicles to maintain its fleet, it continues to have old equipment that is expected to perform to the standards of the newer equipment in the Active component. As the ARNG continues its partnership with the AC on deployments to South West Asia, the Balkans, Training Centers, and other "hot spots" in the world, it has to steadily shuffle equipment within the ARNG to insure it can meet mission requirements. CINCs often require units mobilizing for overseas training to have the same equipment as the rest of the AC force. For example, in the Balkans, equipment such as the older CUCV cannot be supported because the sustainment base is designed for HMMWVs. Local purchase may not be an option and parts have to be requisitioned and shipped from home station or CONUS Depots. The time lag associated with this process poses a problem for commands.

CUCVs fill a significant shortage of HMMWV requirements. The CUCV is on the Army's tactical wheeled vehicle retirement program yet still fills 21 percent of the HMMWV requirements in the Guard. The capability of the CUCV in all variants can not match that of the HMMWV. Reduced funding for repair of the CUCVs causes a degradation of capability and increased complexity in the management of repair parts.

There is a similar problem with the use of 2 1/2 ton and 5 ton cargo trucks as substitutes for HEMTT cargo trucks. The HEMTT cargo truck has a cross-country payload of 22,000 pounds while a 5 ton truck has a limit of 10,000 pounds cross-country. The 2 1/2 ton truck has a maximum payload of only 5,000 pounds. This deficiency could produce operational shortfalls in the event of mobilization.

A new incompatibility problem arises as to what is the proper recovery vehicle for use with the increased number of medium truck companies (equipped with the M915 tractor) and with the fielding of the Palletized Load System (PLS). The proper recovery vehicle for heavy truck recovery is the 10-ton wrecker. However, the Guard currently has 53 percent of their authorized HEMTT wreckers and 15 percent of their FMTV wrecker. Units must continue to use the 5-ton wrecker as a substitute. This substitute decreases the efficiency of recovery operations due to decreased capability and mobility, and presents safety concerns in many situations.

The primary medium transport system in the ARNG remains the M915 truck and the M871, 40 foot, 22-½ ton trailer. The average fleet age for the M915 is 15-19 years, and the Guard has only 53 percent the their authorized M871 trailers and 79 percent of their M872 (34-ton) trailers. The ARNG still uses 681 of the M127 (12-ton) model trailers to fill M871 and M872 authorizations. Currently, there is no projected "get well" date. The Active component also has significant shortfalls with these trailers. Overall, 85 percent of the ARNG trailer fleet is obsolete.

(c) Unit Capabilities to Support Disaster Relief: The problems mentioned above in the tactical wheeled vehicle fleet are further compounded by the high OPTEMPO associated with disaster relief. Obsolete equipment substituting for authorized modern equipment is harder to maintain, not as reliable, and in most cases, does not have the capability of the modern equipment. One example is the 5-ton tank and pump unit (TPU) with a capacity of two 600-gal pods substituting for a 2500 gal HEMTT fuel tanker. The overall shortage for this item is 1008 tankers. The TPU would have to make two trips to move the same amount of fuel as one HEMTT tanker. Currently 56 percent of all of the 5-ton vehicles in the ARNG are considered obsolete, which makes this fleet costly and difficult to maintain. The ARNG also has a large fleet of engineer equipment that requires extensive maintenance to keep it operationally ready. The average age for some of the key engineer equipment in the ARNG as follows: 20-ton Crane -- 29 years, the tracked Crane-Shovel -- 39 years, Road Graders -- 23 years and Road Rollers -- 22 years.

(d) Readiness with First to Employ Units: The ARNG has several first to employ units which serve essential missions in assisting other units in mobilizing and transport to sea and air ports of debarkation. Much of the tank transport capability has moved to the

National Guard. Although the Active component has replaced most of its HET with the new M1070/M1000 systems, the Guard continues to use over 265 of the older M911/M747 systems which do not meet the 70 ton M1A1 Tank weight requirements.

(e) Force Protection Compatibility: Force protection interoperability between ARNG units and their AC counterparts is a key concern. For example, the ARNG will not complete fielding of new the M40 individual NBC mask and the M42 crew vehicle NBC mask until FY 2004. Additionally, the ARNG is not expected to be pure fleeted with M16A2 weapons until FY 2002, and the ARNG requires an additional 6000 SINCGARS radios to replace the older single frequency radios. Furthermore, the ARNG has over 21,000 of the obsolete PVS-5 NVGs and is short over 100,000 of the PVS-7B NVGs. Units are normally required to deploy OCONUS and train with AC units with equipment that is interoperable. As units are designated for participation in these training events major coordination is conducted to cross-level or loan the equipment to meet requirements.

(7) Other Comments: The ARNG is lagging behind the AC in fielding training simulators with a majority of its training simulators requiring upgrade. The A-FIST armored trainer (139 required) requires upgrades totaling $100,000 each. The ARNG also requires 44 more at a cost of $7.392 million. These training simulators maximize limited unit training time and lower OPTEMPO costs.

d) Remaining Shortfalls and Unfunded Requirements

(1) Out-year FYDP Procurement (FY 2004 - 2005): The M109A6 Paladin concludes fielding in FY 2002 leaving a shortfall of 378 systems. It is assumed the Army will cascade the remaining equipment from the AC to replace the older M109A5s. Under the Army COS' new vision, the ARNG anticipates converting one brigade per year between FY 2004 - 2011 to an interim medium wheeled configuration. *Chart 6* depicts other prioritized shortfalls.

Chart 6
PROCUREMENT SHORTFALL PRIORITY LIST

ITEM	FY 2004		FY 2005	
	QTY	COST	QTY	COST
BRADLEY FIGHTING VEHICLE SERIES MOD	60	37.64	58	37.58
M1A1D MOD	54	9.72	153	27.54
ARMY DATA DISTRIBUTION SYSTEM	123	1.23	201	2.02
BLACK HAWK	8	80.00	8	80.00
UH-1 SUSTAINMENT	40	72.00	0	0.00
AVENGER	40	99.24	49	122.31
MEDIUM TACTICAL VEHICLE	232	33.45	232	33.46
APACHE AH-64A (ARNG FIELDING)	6	75.60	6	75.60
MLRS LAUNCHER	19	128.25	19	141.24
AVLB SLEP BLK 1	128	13.85	129	13.93
AVLB	83	16.60	83	16.60
GRADER, MTZD HEAVY	108	30.56	102	28.87
LIGHT MEDIUM TACTICAL VEHICLE	160	26.72	171	28.56
TRUCK UTILITY HEAVY VARIANT (HMMWV)	160	9.44	162	9.56
TOTAL		**$634.30**		**$617.26**

(2) Other Requirements Not Addressed in the FYDP: *Chart 7* identifies equipment not addressed in the current FYDP.

Chart 7
EQUIPMENT SHORTFALLS NOT ADDRESSED IN THE FYDP

NOMENCLATURE	QUANTITY	COST EACH
UH-60 MAINTENANCE TRAINER	2	$3,400,000
A-FIST (ARMOR) TRAINER	64	$168,000
JANUS BATTLE STAFF (UPGRADES)	16	$60,000
JANUS BATTLE STAFF	59	$80,000

e) Summary/Conclusions: The ARNG continues to train and prepare to fight with equipment fleets that are much older than their AC counterparts with which they will fight side by side. The inability of the ARNG to pure-fleet systems continues to increase the operating costs of maintaining the inventory.

Portions of the ARNG tactical wheeled vehicle fleet are becoming less reliable. For example, the Army National Guard has 31,276 wheeled vehicles that are currently on the Army's wheeled vehicle retirement program. Due to the time lag to receive new or cascaded vehicles, the Guard keeps the older vehicles to maintain a readiness capability with increased costs and limited capability. Operational readiness rates do not indicate the level of effort needed to sustain an item or predict its failure rate during sustained operations.

The procurement funding over the last few years has limited the ARNG's ability to fund all readiness items, such as non-priority mission equipment. Consequently, readiness rates are still low and will remain that way until additional funds become available.

ARNG

Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
AVIATION NIGHT VISION GOGGLES,AN/AVS-6(V1)	A06352	10,747	5,563	5,563	5,563	5,563	**5,076**
AVIATION NIGHT VISION GOGGLES,AN/AVS-6(V2)	A06420	14,869	704	704	704	704	**654**
HELICOPTER,OBSERVATION,OH-58D (KIOWA)	A21633	4,075,800	33	33	33	33	**30**
AIR TRAFFIC CONTROL,AN/TSW-7A	A27624	819,882	4	4	4	4	**7**
AIRPLANE,CARGO,TRANSPORT,C-12D	A29812	3,500,000	4	4	4	4	**2**
AIRPLANE,CARGO,C-23	A29880	7,424,158	45	45	45	45	**46**
AIRPLANE,CARGO,C-12	A30062	3,068,422	29	29	29	29	**41**
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	2,357	10,396	10,418	10,430	10,430	**16,772**
RADAR SET,N/TPQ-37(1)	A41666	5,400,000	18	18	18	18	**18**
AIRPLANE CARGO:TRANSPORT,C-26	A46758	4,500,000	5	5	5	5	**10**
NIGHT VISION SIGHT,TOW	A70349	55,000	363	363	363	363	**288**
BOTTLE CLEANING-CHARGING STATION,N/TAM-4	B11795	373,750	28	28	28	28	**31**
BOAT,BRIDGE ERECTION	B25476	154,530	157	157	157	157	**88**
CARRIER,AMMO,TRACKED M992A2	C10908	630,000	192	192	192	192	**324**
CARRIER,MORTAR,120MM,SP,ARMORED	C10990	318,308	497	497	497	497	**228**
ARMORED PERSONNEL CARRIER,FISTV	C12155	627,881	489	489	489	489	**490**
CARRIER,SMOKE GENERATOR,FT,ARMD	C12815	298,778	115	115	115	115	**97**
ARMORED PERSONNEL CARRIER M113A3	C18234	405,815	1,680	1,680	1,680	1,680	**2,551**
BRIDGE ARMORED VEHICLE,SCISSOR TYPE	C20414	87,742	258	258	258	258	**351**
MISSILE COUNTERMEASURES SET,AN/ALQ-156(V)1	C20831	68,900	80	80	80	80	**136**
BRIDGE ERECTION SET,FIXED	C22058	43,944	16	16	16	16	**19**
BRIDGE ERECTION SET,MEDIUM GIRDER	C22126	488,354	7	7	7	7	**10**
BRIDGE FIXED,HIGHWAY,100 FEET	C22811	964,515	13	13	13	13	**20**
BRIDGE FIXED,HIGHWAY,BAILEY TYPE	C23017	303,673	14	14	14	14	**14**
REINFORCEMENT SET,MEDIUM GIRDER BRIDGE	C27309	498,940	7	7	7	7	**10**
CENTRAL MESSAGE SWITCHING UNIT AN/TCY-39(V)1	C41061	3,500,000	2	2	2	2	**4**
TELEPHONE,CENTRAL OFFICE AN/TTC-39A	C41311	2,801,000	14	14	14	14	**14**
CAVALRY FIGHTING VEHICLE,M3A0 (BRADLEY)	C76335	1,056,845	186	186	186	186	**81**
DETECTOR SET,RADAR AN/APR-39A	D03159	39,984	970	1,012	1,012	1,012	**1,158**
CARRIER,M106A1,107MM MORT,4.2IN	D10741	205,400	244	244	244	244	**218**
CARRIER,CARGO,FT,6 TON M548	D11049	323,416	939	939	939	939	**657**
CARRIER,COMMAND POST M577A1	D11538	345,787	2,138	2,138	2,138	2,138	**1,799**
ARMORED PERSONNEL CARRIER M113A1/2	D12087	244,844	3,600	3,600	3,600	3,600	**1,447**
DISPENSER,MINE XM139	D30897	60,000	281	287	293	293	**317**
DATA PROCESS SYSTEM AN/MYQ-4	D78075	258,560	8	8	8	8	**0**
DATA PROCESS SYSTEM AN/MYQ-4A	D78325	750,000	5	5	5	5	**4**
EXTERNAL STORES SUBSYSTEM,UH-60A	E21985	184,908	41	41	41	41	**416**
COMMUNICATIONS TECH AN/TSQ-84 LP	E60197	100,000	1	1	1	1	**2**
COMPACTOR,HIGH SPEED	E61618	135,005	107	107	107	107	**107**
CRANE,WHEEL MOUNTED,20T	F39378	162,393	6	6	6	6	**133**
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	1,349,348	329	329	329	329	**386**
CRANE-SHOVEL,CRAWLER MOUNTED	F40474	270,000	1	1	1	1	**9**
CRANE,TRUCK MTD,AIRCRAFT MAINT AND POSITION	F43003	60,107	25	25	26	26	**52**
CRUSH & SCREEN PLANT,75TPH	F49399	131,168	6	6	6	6	**10**
FIRE UNIT VEHICLE MOUNTED,AVENGER	F57713	1,059,018	271	271	271	271	**360**
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	1,144,000	202	222	222	222	**216**
GENERATOR SET,DSL ENG,TM,10KW,60HZ,MTD ON M116 PU	G40744	12,102	817	817	817	817	**840**
GENERATOR SET,DSL ENG,SKID MTD,3KW,60HZ,AC,120/208	G54041	6,459	1,320	1,320	1,320	1,320	**5,496**

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Table 1

Consolidated Major Item Inventory and Requirements

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
ELECTRONIC SHOP AN/ASM-190LP	H01857	111,072	105	105	105	105	**129**
HELICOPTER,ATTACK AH-64 (APACHE)	H28647	10,680,000	151	151	151	151	**168**
HELICOPTER,CARGO CH-47D (CHINOOK)	H30517	24,800,000	136	136	136	136	**141**
HELICOPTER,OBSERVATION OH-58C (KIOWA)	H31110	2,800,000	109	109	109	109	**21**
HELICOPTER,MEDICAL UH-1V (IROQUOIS)	H31872	4,500,000	226	226	226	226	**45**
HELICOPTER,UTILITY UH-60L (BLACK HAWK)	H32361	11,000,000	84	84	84	84	**262**
RADIO SET,HF AN/GRC-193A	H35404	37,000	400	406	406	406	**561**
HELICOPTER,ATTACK AH-1F (COBRA)	H44644	6,604,397	353	353	353	353	**322**
HOWITZER,LIGHT,TOWED,105MM M119	H57505	619,933	58	58	58	58	**65**
HOWITZER,MEDIUM,SP,155MM M109A6 (PALADIN)	H57642	1,435,000	272	272	272	272	**324**
GENERATOR,PU-405	J35492	20,039	652	652	652	652	**732**
GENERATOR SET,DIESEL ENGINE,5KW	J35813	8,332	2,039	2,039	2,039	2,039	**2,926**
GENERATOR SET,DIESEL ENGINE,30KW	J36383	20,810	538	538	538	538	**586**
GRADER,ROAD,MOTORIZED,FRONT WHEEL STEER	J74852	129,684	5	5	5	5	**26**
GRADER,ROAD,MOTORIZED,SECTIONALIZED	J74886	223,471	0	0	0	0	**13**
GRADER,ROAD,MOTORIZED,10FT BLADE	J74910	150,000	0	0	0	0	**11**
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	1,061,457	822	822	822	822	**514**
INTERROGATOR SET AN/PPX-3 (STINGER)	J98501	38,679	962	962	1,028	1,028	**2,072**
HELICOPTER,OBSERVATION OH-58A (KIOWA)	K31042	1,900,000	191	191	191	191	**144**
HELICOPTER,UTILITY UH-1H (IROQUOIS)	K31795	4,500,000	589	589	589	589	**389**
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293	11,000,000	383	383	383	383	**421**
HOWITZER,M102,105MM,LT,TWD	K57392	126,016	343	343	343	343	**242**
HOWITZER,MEDIUM,SP,155MM M109A5	K57667	758,038	963	963	963	963	**501**
HOWITZER,MEDIUM,TOWED,155MM M198	K57821	1,032,337	413	413	413	413	**375**
INTERIOR BAY BRIDGE,FLOATING	K97376	41,940	244	244	244	244	**180**
KITCHEN,FIELD,TRAILER MOUNTED,MTD ON M103A3 TR	L28351	28,452	1,555	1,560	1,569	1,569	**1,710**
LAUNCH,M60 TANK CHASSIS	L43664	527,126	238	238	238	238	**361**
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894	1,973,897	324	324	324	324	**306**
LAUNCHER,TUBULAR,GUIDED MISSILE (TOW)	L45740	133,000	1,345	1,345	1,345	1,345	**773**
LINE OF SIGHT RADIO AN/TRC-190(V)1	L69306	276,750	507	507	507	507	**515**
MACHINE GUN,5.56MM M249 (SAW)	M09009	2,653	16,529	16,529	16,531	16,531	**14,245**
MASK,CHEMICAL BIOLOGICAL M40	M12418	95	284,591	284,591	284,612	284,612	**280,120**
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	135	52,542	52,554	52,554	52,554	**50,126**
MEDICAL EQUIPMENT SET CHEM AGENT PATIENT TREATMENT	M23673	14,601	393	393	393	393	**866**
MEDICAL EQUIPMENT SET GROUND AMBULANCE	M26413	8,947	1,634	1,634	1,634	1,634	**1,846**
MEDICAL EQUIPMENT SET,SICK CALL,FIELD (2)	M30156	7,418	713	713	716	716	**933**
MEDICAL EQUIPMENT SET,TRAUMA,FIELD (2)	M30499	13,383	743	743	750	750	**928**
LAUNCHER,GRENADE,40MM,MARK 19-3	M92362	15,320	2,845	3,474	4,228	4,228	**7,681**
MACHINE GUN,7.62MM 240C	M92420	4,890	1,653	1,653	1,653	1,653	**1,145**
NIGHT VISION GOGGLES AN/PVS-5	N04456	4,300	19,295	19,295	19,295	19,295	**31,987**
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	3,433	3,305	3,402	3,448	3,448	**15,288**
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	69,641	6	6	6	6	**200**
NIGHT VISION GOGGLES AN/PVS-7B	N05482	3,578	41,815	41,988	42,551	42,551	**145,497**
OPERATIONS GROUP OL-412/TTC-46	P05439	1,570,000	3	3	3	3	**9**
RADIO SET AN/ARC-102	Q25978	16,932	26	26	26	26	**7**
RADIO SET AN/ARC-114	Q25990	20,857	647	647	647	647	**348**
RADAR SET AN/TPQ-36(V)	R14148	3,760,576	30	30	30	30	**32**
RADIO ACCESS UNIT	R33351	1,184,275	167	167	167	167	**173**
RADIO TERMINAL SET AN/TRC173	R39452	657,000	48	48	48	48	**48**
REPEATER SET,RADIO AN/TRC-174	R39520	519,000	44	44	44	44	**44**
RADIO TERMINAL SET AN/TRC-175B	R39588	640,000	14	14	14	14	**14**
RADIO SET AN/VRC-92A (SINCGARS)	R45407	21,238	1,503	1,581	1,620	1,620	**5,441**

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Consolidated Major Item Inventory and Requirements

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
RECOVERY VEHICLE,FT,MDM M88A1	R50681	1,210,755	859	859	859	859	**922**
RADIO SET AN/PRC-119 (SINCGARS)	R55268	6,418	11	11	11	11	**10**
RADIO SET AN/PRC-126	R55336	1,997	6,054	6,054	6,054	6,054	**4,791**
TACTICAL SATCOM BASE STATION AN/VSC-7	R57843	42,000	19	19	19	19	**9**
RADIO SET AN/VRC-87A (SINCGARS)	R67160	12,109	4,955	4,955	4,955	4,955	**3,874**
RADIO SET AN/VRC-88A (SINCGARS)	R67194	12,519	4,638	4,717	4,741	4,741	**4,883**
RADIO SET AN/VRC-90A (SINCGARS)	R67908	13,178	9,574	10,066	10,349	10,349	**14,177**
RADIO SET AN/VRC-91A (SINCGARS)	R68010	23,249	4,224	4,254	4,254	4,254	**6,667**
RADIO SET AN/PRC-112	R82903	5,020	761	789	789	789	**5,505**
RADIO SET AN/VRC-119A (SINCGARS)	R83005	10,117	7,623	7,631	7,656	7,656	**4,764**
RADIO TERMINAL SET,HEAVY TROPO AN/TRC-170(V)2	R92967	2,000,000	16	16	16	16	**16**
RADIO TERMINAL SET AN/TRC-170	R93035	1,000,000	64	64	64	64	**64**
RIFLE,5.56 MM M16A2	R95035	449	211,224	211,224	211,224	211,224	**278,416**
LARGE EXTENSION NODE ON-305/TTC-46	S24750	1,321,000	4	4	4	4	**9**
NODE CENTRAL SWITCH AN/TTC-47	S24818	2,600,000	15	15	15	15	**19**
SMALL EXTENSION NODE SWITCH AN/TTC-48(V)2	S25379	550,000	65	65	65	65	**101**
SMALL EXTENSION NODE SWITCH AN/TTC-48(V)1	S25447	510,000	74	74	74	74	**147**
SHOP SET,CONTACT MAINTENANCE	S30914	41,346	224	224	224	224	**280**
SHOP SET,CONTACT,MAINTENANCE	S30982	29,811	225	225	225	225	**401**
SEMITRAILER,22-1/2 TON M871	S70027	24,483	981	981	1,014	1,014	**1,875**
SEMITRAILER,FB,TRANSPORTR,34T	S70159	20,004	147	147	147	147	**7**
SEMITRAILER,LOW BED,40 TON,6-WHEEL	S70594	22,947	960	960	960	960	**1,101**
SEMITRAILER,HVY EQUIP TRANSPORTER,60T (HET)	S70661	70,564	257	257	257	257	**190**
SEMITRAILER,HVY EQUIP TRANS SYS,70T (HETS)	S70859	198,789	36	36	36	36	**54**
SEMITRAILER,VAN,SUP M129A2C	S75175	84,466	541	541	541	541	**1,259**
TRUCK UTILITY: HEAVY VARIANT HMMWV 4X4 10000 GVW	T07679	58,374	414	415	415	415	**1,299**
TANK,COMBAT,120MM M1A1 (ABRAMS)	T13168	2,393,439	1,504	1,504	1,516	1,516	**1,567**
TANK,COMBAT,105MM M1 (ABRAMS)	T13374	1,645,697	1,618	1,618	1,618	1,618	**1,048**
SHOP EQUIP GM SYS (TOW)	T14493	120,847	132	132	132	132	**67**
TARGET DESIGNATOR SET,ELEC OPT	T26457	193,000	522	525	528	528	**591**
SMALL EMPLACEMENT EXCAVATOR W/FRONT LOADER	T34437	69,643	778	778	778	778	**790**
TRUCK,CARGO,TACTICAL,W/W-LT CR (HEMTT)	T39518	193,789	225	225	225	225	**342**
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	194,853	751	757	768	768	**807**
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999	243,746	109	109	109	109	**72**
TRANSPORTER,PALLETIZED LOAD SYS W/MHE (PLS)	T41067	288,015	772	772	772	772	**811**
TRUCK, CARGO, MTV W/W M1083	T41135	134,047	36	36	36	36	**36**
TEST SET,TOW	T48686	228,211	43	43	43	43	**51**
ROUGH TERRAIN CARGO HANDLER,50K LB (RTCH)	T48941	159,138	13	13	13	13	**16**
TRUCK,FORK LIFT,6K LB,RT,VARIABLE REACH	T48944	72,370	366	366	366	366	**168**
TRUCK,FORK LIFT,DD,4K LB,RT	T49255	47,692	420	420	422	422	**402**
MOBILE SUBSCRIBER AN/VRC-97 (MSRT)	T55957	110,000	2,647	2,647	2,647	2,647	**3,006**
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	246,567	504	518	518	518	**435**
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048	256,704	32	32	32	32	**54**
TRUCK,CARGO,10TON,W/LT CRANE (HEMTT)	T59278	185,820	871	871	871	871	**741**
TRUCK,CARGO,4X4,LMTV M1078	T60081	104,626	70	79	79	79	**382**
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	36,076	16,633	16,668	16,681	16,681	**26,468**
TRUCK,CARGO,MTV W/E M1083	T61908	128,076	3	3	3	3	**32**
TEST FACILITY,ELEC OQ-290	T61973	1,400,000	2	2	2	2	**1**
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	276,866	553	553	556	556	**960**
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	100,199	2	2	2	2	**27**
TEST SET,FIELD (TOW)	T79200	264,054	46	46	46	46	**56**
TRUCK,TANKER,FUEL,2500G (HEMTT)	T87243	237,210	748	748	748	748	**1,678**

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Table 1

Consolidated Major Item Inventory and Requirements

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
TRUCK,TRACTOR,TACTICAL,8X8,HEAVY EXPANDED	T88677	159,183	27	27	27	27	**90**
TRUCK,TRACTOR,LET M916	T91656	138,870	132	132	132	132	**145**
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	64,281	3,298	3,298	3,298	3,298	**2,426**
TRUCK,UTILITY,1-1/4 TON,M1036,TOW (HMMWV)	T92310	39,518	891	891	891	891	**1,438**
TRAILER,PALLETIZED LOAD SYSTEM (PLS)	T93761	41,910	115	115	115	115	**73**
WATER STORAGE/DISTRIBUTION SET,300000 GPD	W37243	320,518	2	2	2	2	**4**
REVERSE OSMOSIS WATER PURIF UNIT,3OOO GPH	W47225	748,000	93	93	103	103	**119**
WATER STORAGE/DISTRIBUTION SET,40000 GPD	W55968	121,746	7	8	8	8	**21**
TRACTOR,FULL TRACKED,ARMORED M9 (ACE)	W76473	448,587	45	45	45	45	**86**
TRACTOR,FULL TRACKED,LOW SPEED	W76816	172,896	593	593	593	593	**363**
TRACTOR,FT,LS,DED,MED	W83529	106,190	245	245	245	245	**731**
TRUCK,CARGO,5T,DROP SIDE WW	X40931	85,946	1,437	1,437	1,437	1,437	**1,188**
TRUCK,DUMP,5T,6X6,W/E M929	X43708	89,115	1,819	1,819	1,819	1,819	**1,568**
TRUCK,DUMP,5T 6X6 WW WE	X43845	93,130	776	776	776	776	**435**
TRUCK,DUMP,20T,12 CY M917	X44403	74,034	417	417	417	417	**502**
VIEWER,INFRARED AN/PAS-7	Y03104	16,779	42	42	42	42	**45**

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Average Age of Equipment

NOTE: This table provides the average age of selected major items of equipment. Since equipment is normally procured over several years, the average age provides a projected average age of the fleet for budget year (BY) 2001.

NOMENCLATURE	*EQUIP No.*	*AVERAGE AGE*	*REMARKS*
CARRIER, AMMO, TRACKED M992A2	C10908	13	
ARMORED PERSONNEL CARRIER, FISTV	C12155	32	
CARRIER, SMOKE GENERATOR, FT, ARMD	C12815	27	
BRIDGE ARMORED PERSONNEL CARRIER M113A3	C18234	11	
BRIDGE ARMORED VEHICLE, SCISSOR TYPE	C20414	29	
CAVALRLY FIGHTING VEHICLE M3A0(BRADLEY)	C76335	15	
CARRIER, M106A1, 107MM MORT, 4.2IN	D10741	33	
CARRIER CARGO, FT, 6 TON M548	D11049	31	
CARRIER, COMMAND POST M577A1	D11538	12	
ARMORED PERSONNEL CARRIER, FM113A1/2	D12087	28	
DATA PROCESS SYSTEM AN/MYQ-4	D78075	17	
DATA PROCESS SYSTEM AN/MYQ-4A	D78325	17	
CRANE, WHEEL MOUNTED, 20T	F39378	29	
INFANTRY FIGHTING VEHICLE M2A2 (BRADLEY)	F40375	8	
CRANE-SHOVEL, CRAWLER MOUNTED	F40474	39	
RIRE UNIT VEHICLE MOUNTED, AVENGER	F57713	7	
CAVALRY FIGHTING VEHICLE M3A2 (BRADLEY)	F60530	11	
DECONTAMINATION APPARATUS, SKID MOUNTED	F81880	26	
GENERATOR SET, DSL ENG, TM, 10KW, 60HZ, MTD ON M116 PU	G40744	10	
ELECTRONIC SHOP AN/ASM-190LP	H01857	11	
GENERATOR, PU-405	J35492	16	
GENERATOR SET, DIESEL ENGINE, 30KW	J36383	16	
GRADER, ROAD, MOTORIZED, FRONT WHEEL STEER	J74852	23	
INFANTRY FIGHTING VEHICLE M2A0 (BRADLEY)	J81750	15	
HOWITZER, M102, 105MM, LT, TWD	K57392	47	
HOWITZER, MEDIUM, SP, 155MM M109A5	K57667	25	
KITCHEN, FIELD, TRAILER MOUNTED, MTD ON M103A3 TR	L28351	21	
LAUNCH, M60 TANK CHASSIS	L43664	30	
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894	9	
RECOVERY VEHICLE, FT, MDM M88A1	R50681	24	
ROLLER PNEUMATIC, ARIABLE PRESSURE	S11793	22	
SHOP SET, CONTACT MAINTENANCE	S30914	32	
SHOP SET, CONTACT MAINTENANCE	S30982	28	
SEMITRAILER, 221/2 TON M871	S70027	17	
SEMITRAILER, FB, TRANSPORTER, 34T	S70159	17	
SEMITRAILER, LOW BED, 40 TON, 6-WHEEL	S70594	24	
SEMITRAILER, HVY EQUIP TRANSPORTER, 60T (HET)	S70661	23	
SEMITRAILER TANK, PETROLEUM, 7500 GAL, BULK HAUL	S73119	8	
SEMITRAILER, VAN, SUP M129A2C	S75175	32	
SHELTER SYSTEM, COLLECTIVE, 1O MAN	T00474	18	
TRUCK UTILITY: HEAVY VARIANT HMMWV 4X4 10000	T07679	6	
SHOP EQUIPMENT, CONTACT	T10138	41	
TANK, COMBAT, 120MM M1A1 (ABRAMS)	T13168	12	
TANK, COMBAT, 105 MM M1A1 (ABRAMS)	T13374	16	
SMALL EMPLACEMENT EXCAVATOR W/FRONT LOADER	T34437	11	
TRUCK, CARGO, TACTICAL, W/W-LT CR (HEMTT)	T39518	13	
TRUCK, M985, CARGO, W/MED CR (HEMTT)	T39586	9	
TRANSPORTER, PALLETIZED LOAD SYSTEM (PLS)	T40999	5	

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Average Age of Equipment

Table 2

NOMENCLATURE	*EQUIP No.*	*AVERAGE AGE*	*REMARKS*
ROUGH TERRAIN CARGO HANDLER, 50K LB (RTCH)	T48941	16	
TRUCK, FORK LIFT, 6K LB, RT, VARIABLE REACH	T48944	8	
TRUCK, FORK LIFT, DD, 4K LB, RT	T49255	18	
TRUCK, TANKER, FUEL, 2500G WW (HEMTT)	T58161	10	
TRUCK, TRACTOR, HEAVY EQUIP TRANS SYS (HET)	T59048	6	
TRUCK, CARGO, 10 TON, W/LT CRANE (HEMTT)	T59278	13	
TRUCK, UTILITY, 1-1/4 TON, M998, WE (HMMWV)	T61494	10	
TRUCK, WRECKER, M948E1, 8X8 (HEMMT)	T63093	16	
TRUCK, TANKER, FUEL, 2500G (HEMMT)	T87243	10	
TRUCK, TRACTOR, TACTICAL, 8X8, HEAVY EXPANDED	T88677	15	
TRUCK, TRACTOR, LET M916	T91656	7	
TRUCK, UTILITY, 1-1/4 TON, M1036, TOW (HMMWV)	T92310	10	
TRACTOR, FULLTRACKED, ARMORED M9 (ACE)	W76473	6	
TRACTOR, FULLTRACKED, LOW SPEED	W76816	34	
TRACTOR, FULLTRACKED, LOW SPEED, DED, MED	W83529	27	
TRACTOR, WHEELED, WAREHOUSE, 4K LB	W89557	22	
TRUCK, CARGO, 5T, DROP SIDE WW	X40931	25	
TRUCK, DUMP, 5T 6X6 WW WE	X43845	32	
TRUCK, DUMP, 20T, 12 CY M917	X44403	20	

ARNG
Service Planned Procurments (P-1R Data)

NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurment funds as identified in the P-1R exhibit of the President's budget. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 2001*	*FY 2002*	*FY 2003*	*REMARKS*
UH-60 BLACKHAWK (MYP)	81,200,000	110,800,000	233,700,000	
AH1F MODS	400,000	500,000	500,000	
CH-47 CARGO HELICOPTER MODS (MYP)			33,800,000	
UTILITY/CARGO AIRPLANE MODS	800,000	1,500,000	1,500,000	
AVENGER SYSTEM SUMMARY	21,300,000	34,300,000	60,200,000	
JAVELIN (AAWS-M) SYSTEM SUMMARY	86,100,000	71,300,000	68,300,000	
MLRS LAUNCHER SYSTEMS	14,900,000	41,100,000	88,900,000	
HIMARS LAUNCHER			65,100,000	
AVENGER MODS	2,000,000		1,500,000	
MLRS MODS	1,300,000	3,100,000	3,000,000	
SPARES AND REPAIR PARTS	1,500,000		11,000,000	
HOWITZER, MED SP FT 155MM M109A6 (MOD)	2,600,000	*		
FAASV PIP TO FLEET		12,800,000		
ARMOR MACHINE GUN, 7.62MM M240 SERIES	12,400,000	8,100,000	7,100,000	
GRENADE LAUNCHER, AUTO, 40MM, MK19-3	7,200,000	11,400,000	11,300,000	
M16 RIFLE	3,800,000	1,600,000	2,500,000	
5.56 CARBINE M4	5,200,000			
M119 MODIFICATIONS	3,200,000		3,200,000	
SEMITRAILER FB BB/CONT TRANS 22 1/2 T	12,100,000	5,600,000	8,300,000	
SEMITRAILER, TANK, 5000G	30,200,000	24,200,000	39,800,000	
SEMITRAILER, TANK, 7500G, BULKHAUL	4,000,000	16,100,000	24,300,000	
HI MOB MULTI-PURP WHLD VEH (HMMWV)	5,300,000	17,300,000		
FAMILY OF MEDIUM TACTICAL VEH (FMTV)	84,000,000	52,800,000	152,400,000	
FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIP		1,600,000	11,300,000	
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)	121,800,000	122,000,000	148,000,000	
TRUCK, TRACTOR, LINE HAUL, M915/M916	39,500,000	43,000,000	42,900,000	
ACUS MOD PROGRAM (WIN T/T)		34,000,000	34,000,000	
TSEC - ARMY KEY MGT SYS (AKMS)	700,000	700,000	500,000	
ALL SOURCE ANALYSIS SYS (ASAS) (TIARA)			37,600,000	
JOINT STARS (ARMY) (TIARA)	66,400,000	12,300,000		
DIGITAL TOPOGRAPHIC SPT SYS (DTSS) (TIARA)	4,500,000			
CI HUMINT AUTOMATED TOOL SET (CHATS) (TIARA)			5,900,000	
FAAD GBS	24,200,000	28,500,000	31,900,000	
ARTILLERY ACCURACY EQUIP	10,900,000	500,000		
MOD OF IN-SVC EQUIP (TAC SURV)	8,300,000	30,400,000	24,500,000	
DIGITIZATION APPLIQUE		5,000,000	12,500,000	
TOPO SUPPORT SYSTEM (TSS)		800,000	600,000	
ADV FIELD ARTILLERY TACT DATA SYS (AFATDS)	28,400,000	25,600,000	50,400,000	
FAAD C2	17,900,000	6,200,000	12,300,000	
LOGTECH	1,500,000	1,500,000	1,500,000	
GUN LAYING AND POS SYS (GLPS)	7,700,000	8,300,000		
ISYSCON EQUIPMENT	1,900,000	7,400,000	6,400,000	
MANEUVER CONTROL SYSTEM (MCS)			7,500,000	
STAMIS TACTICAL COMPUTERS (STACOMP)	15,600,000	16,700,000	17,900,000	
AUTOMATED DATA PROCESSING EQUIP	1,600,000	1,200,000	12,300,000	
RESERVE COMPONENT AUTOMATION SYS (RCAS)	57,000,000	55,400,000	11,600,000	
GENERATOR, SMOKE, MECH M58		3,700,000	2,000,000	
WIDE AREA MUNITIONS (REMOTE CONTROL UNIT)			900,000	
FAMILY OF TANK ASSEMBLIES, FABRIC, COLLAPSIBLE	2,500,000			

ARNG
Service Planned Procurments (P-1R Data)

NOMENCLATURE	*FY 2001*	*FY 2002*	*FY 2003*	*REMARKS*
DISTRIBUTION SYSTEMS, PETROLEUM & WATER			33,900,000	
WATER PURIFICATION SYSTEMS		13,800,000	22,100,000	
GRADER, ROAD MTZD, HVY, 6X4 (CCE)			1,200,000	
LOADERS		2,100,000	3,500,000	
HYDRAULIC EXCAVATOR	2,100,000			
DEPLOYABLE UNIVERSAL COMBAT EARTH MOVERS	2,100,000			
TRACTOR, FULL TRACKED			7,000,000	
CRANES		1,300,000	600,000	
CRUSHING/SCREENING PLANT, 150 TPH		1,900,000	3,800,000	
GENERATORS AND ASSOCIATED EQUIP	5,000,000			
ALL TERRAIN LIFTING ARMY SYSTEM	4,800,000		5,300,000	
TRAINING DEVICES, NONSYSTEM	45,200,000	36,500,000	6,000,000	
CLOSE COMBAT TACTICAL TRAINER	25,200,000			
FIRE SUPPORT COMBINED ARMS TACTICAL TRAINER	1,500,000			
CALIBRATION SETS EQUIPMENT	500,000	400,000	400,000	
TEST EQUIPMENT MODERNIZATION (TEMOD)	5,600,000	5,200,000	5,700,000	
INITIAL SPARES - C&E	2,300,000	3,400,000	1,300,000	
TOTAL PROCUREMENTS FOR THE ARNG	**884,200,000**	**881,900,000**	**1,379,700,000**	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 1998*	*FY 1999*	*FY 2000*	*REMARKS*
TRUCK, 2 1/2 TON EXT SERVICE PROGRAM (ESP)	15,050,000			
CH-47D FULL AUTH DIGITAL ELEC CONTROL (FADEC)	4,000,000			
ARMOR FULLY INT SIMULATION TRAINER (AFIST)	5,300,000	1,800,000	3,360,000	
AVIATION RECONFIG MISSION SIMULATOR (ARMS)	5,000,000			
NIGHT VISION GOGGLES, AN/PVS-7B/D	4,820,000			
FUEL CELLS, CH-47D HELICOPTER	5,000,000		1,000,000	
UNIT LEVEL LOGISTICS SYSTEM-AVIATION (ULLS-A)	2,000,000			
JANUS (NEW)	1,600,000		960,000	
JANUS (UPGRADES)			720,000	
TRUCK,TRACTOR 5 T FMTV M1088	4,280,000			
GUN LAYING POSITIONING SYSTEM-GLPS	1,190,000			
GUARDFIST II	1,030,000			
AEROMED HOIST	0	1,624,000		
HEMTT TANKER, M978	0	4,800,000	3,990,000	
MANEUVER CONTROL SYSTEM	1,900,000			
METEORLOGICAL MEASURING SYSTEM-MMS	5,000,000		2,857,000	
SINCGARS RADIOS		1,376,000	4,848,000	
T-801 ENGINE UPGRADE-UH-1 HELICOPTER		3,400,000		
TELECOMMUNICATION SWITCH UPGRADE FOR Y2K	6,200,000			
WATER PURIFICATION 3000GPM TM	2,000,000			
ENGAGEMENT SKILLS TRAINER	4,980,000			
SEMI TRAILER, 22.5 TON, M871		7,000,000		
TBD	650,000			
HMMWV CONTACT MAINT TRUCK			7,153,000	
HMMWV EOD CONTACT MAINT TRUCK			1,092,000	
UH-60 MAINTENANCE TRAINER			3,400,000	
ROLLER VIBRATOR			462,000	
Total Army National Guard	**70,000,000**	**20,000,000**	**29,842,000**	

ARNG
Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

NOMENCLATURE	*EQUIP No.*	*FY 2001 QTY*	*FY 2002 QTY*	*FY 2003 QTY*	*REMARKS*
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	24	22	12	
AIMING LIGHT,INFRARED,AN/PAQ-4	A34938	555	1089	72	
BATTERY CASE,Z-AIJ/TSEC	C62375	31	8	8	
DISPENSER,MINE XM139	D30897	6	6	6	
LAUNCHER,GRENADE,40MM,MARK 19-3	M92362	124	48	108	
NIGHT VISION SIGHT,CREW SERV WPN AN/TVS-5	N04596	69	97	46	
NIGHT VISION GOGGLES AN/PVS-7B	N05482	182	173	563	
RADIACMETER IM-93/UD	Q20935	11	72	204	
RADIO SET AN/VRC-89A (SINCGARS)	R44863	131	21	1	
RADIO SET AN/VRC-88A (SINCGARS)	R67194	67	79	24	
RADIO SET AN/VRC-90A (SINCGARS)	R67908	184	440	135	
TANK ASSY,FABRIC,COLLAPSIBLE,WATER,20000 GAL	T12938	2	91	25	
TARGET DESIGNATOR SET,ELEC OPT	T26457	6	3	3	
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	6	6	11	
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	1	35	13	

ARNG
FY 1999 Planned vs Actual Procurements and Transfers

NOTE: This table compares what the Services planned to procure and transfer to the RC in FY 1999 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered in FY 1999.

Nomenclature	*Equip No.*	*FY 99 Transfers*		*FY 99 Procurements*		*FY 99 NGREA*	
		Planned	*Actual*	*Planned*	*Actual*	*Planned*	*Actual*
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	2,200	0				
NIGHT VISION SIGHT,TOW	A70349	115	0				
CARRIER,AMMO,TRACKED M992A2	C10908			180	36		
ARMORED PERSONNEL CARRIER,FISTV	C12155			3	3		
CARRIER,SMOKE GENERATOR,FT,ARMD	C12815	42	2				
BRIDGE ARMORED VEHICLE,SCISSOR TYPE	C20414			7	0		
CARRIER,M106A1,107MM MORT,4.2IN	D10741			317	0		
CARRIER,CARGO,FT,6 TON M548	D11049			151	0		
DRUM,FABRIC,COLLAPSIBLE,WATER,500 GAL	D69050			34	0		
FIRE UNIT VEHICLE MOUNTED,AVENGER	F57713			48	0		
GENERATOR PWR UNIT,10KW,60HZ,TRLR MTD (TQG)	G42170			2	373		
GENERATOR SET,DSL ENG,SKID MTD,3KW,60HZ,AC,120/208	G54041			18	683		
HELICOPTER,UTILITY UH-60L (BLACK HAWK)	H32361			5	17		
HOWITZER,MEDIUM,SP,155MM M109A6 (PALADIN)	H57642			94	94		
IR JAMMER SET AN/ALQ-144A(V)1	J01849			50	0		
GENERATOR,SMOKE,MECHANICAL PULSE	J30492	36	0				
GENERATOR,SMOKE, M58							
HELICOPTER,UTILITY UH-60A (BLACK HAWK)	K32293	23	0				
KITCHEN,FIELD,TRAILER MOUNTED,MTD ON M103A3 TR	L28351			74	0		
MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)	L44894			9	6		
MASK,CHEMICAL BIOLOGICAL M40	M12418			61,130	0		
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526			26,393	0		
NIGHT VISION GOGGLES AN/PVS-7B	N05482						
RADIO SET AN/VRC-89A (SINCGARS)	R44863	770	0		*		
RADIO SET AN/VRC-92A (SINCGARS)	R45407	670	0		*		
RECOVERY VEHICLE,FT,MDM M88A1	R50681			12	0		
RADIO SET AN/VRC-87A (SINCGARS)	R67160	1,409	0		*		
RADIO SET AN/VRC-90A (SINCGARS)	R67908	2,029	0		*		
RADIO SET AN/VRC-91A (SINCGARS)	R68010	846	0		*		
RADIO SET AN/VRC-119A (SINCGARS)	R83005	410	0		*		
RIFLE,5.56 MM M16A2	R95035	11,000	20,000				
SEMITRAILER,LOW BED,M871	S70027					184	0
SEMITRAILER,LOW BED,40 TON,6-WHEEL	S70594						
TRUCK UTILITY: HEAVY VARIANT HMMWV 4X4 10000 GVW	T07679			100	0		
TANK ASSY,FABRIC,COLLAPSIBLE,WATER,20000 GAL	T12938			8	0		
TANK,COMBAT,120MM M1A1 (ABRAMS)	T13168	30	0				
TANK,COMBAT,105MM M1 (ABRAMS)	T13374			27	0		
SHOP EQUIP GM SYS (TOW)	T14493			1	0		
TARGET DESIGNATOR SET,ELEC OPT	T26457			10	0		
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999			96	48		
TRUCK,FORK LIFT,DD,4K LB,RT	T49255	8	2				
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HETS)	T59048			153	153		
TRUCK,TRACTOR,MTV M1088	T61239						
TRUCK,TANKER,FUEL,2500G (HEMTT)	T87243					16	0
WATER QUALITY ANALYSIS SET,PURIFICATION	W47475			4	0		

ARNG
FY 1999 Planned vs Actual Procurements and Transfers

Nomenclature	*Equip No.*	*FY 99 Transfers*		*FY 99 Procurements*		*FY 99 NGREA*	
		Planned	*Actual*	*Planned*	*Actual*	*Planned*	*Actual*
TRACTOR,FULL TRACKED,LOW SPEED	W76816	47	30				
TRACTOR,FT,LS,DED,MED	W83529						
TRUCK,DUMP,20T,12 CY M917	X44403						
RADIO (SINCGARS ASIP)						220	0
AEROMED HOIST						13	0
ARMOR FULL INTEGRATED SIM TRAINER (AFIST)						12	0
DISE/RECEPTICLE				0	4		
FADD C2				0	1		
FADD GBS				0	24		
GEN SET, DE, 30KW, 60HZ				0	26		
GUNLAYING AND POS SYSTEM (GLPS)				0	57		
TRUCK, TRACTOR, LINE HAUL, M915A2				0	305		
TRAILER, PLS, 8X20				0	48		
POWER PLANT, AN/MJQ				0	5		
* RADIO SET AN/VRC-89A (SINCGARS)	ALL				5,000		

ARNG
Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.

Required Item Nomenclature	*Required Item Equip No.*	*Substitute Item Nomenclature*	*Substitute Item Equip No.*	*FY 2001 QTY*	*Deployable*	
					Yes	*No*
AIR TR CTL AN/TSW-7A	A27624	ACFT CTL AN/TSQ-70 LP	A28833	1	X	
CARR AMMO TRKED VEH	C10908	CARR CGO FT 6 TON M548	D11049	36	X	
CARR PERS FT ARMD FS	C12155	CARR PERS FT M113A1	D12087	19	X	
CARR PERS FT ARMD	C18234	CARR COMD POST M577A1	D11538	8	X	
CARR PERS FT ARMD	C18234	CARR PERS FT M113A1	D12087	1,355	X	
CARR PERS FT M113A1	D12087	CARR PERS FT ARMD	C18234	160	X	
CARR PERS FT M113A1	D12087	CARR COMD POST M577A1	D11538	2	X	
FIGHTING VEH HS M2A2	F40375	CARR PERS FT M113A1	D12087	47	X	
CRANE TRK MTD AAM POS	F43003	CRANE WHL MTD HYD LT	C36151	11	X	
GEN ST DSL ENG TM	G40744	GEN SET DED TM PU-798	G42170	35	X	
GEN ST DSL ENG SKID MT	G54041	GENR SET GAS ENG 3KW	J45699	1,016	X	
HF RDD SET AN/GRC-193A	H35404	RDO ST AN/GRC-106	Q32756	107	X	
GENR SET DSL ENG PU405	J35492	GEN SET DIESEL ENG TM	G53778	6	X	
GENR SET DSL ENG 002A	J35813	GEN SET DED SKID MTD	G11966	66	X	
GENR SET DSL ENG 002A	J35813	GENR SET DSL ENG 10KW	J35825	103	X	
GENR SET DSL ENG 002A	J35813	GENR SET GAS ENG PU619	J42100	48	X	
GENR SET DSL ENG 002A	J35813	GENR SET GAS ENG 5KW	J47068	115	X	
GENR SET DSL ENG 002A	J35813	GENR SET GAS ENG PU620	J47617	95	X	
GENR SET DSL ENG 002A	J35813	GENR SET GAS ENG 10KW	J49398	28	X	
GENR SET DSL ENG 30KW	J36383	GEN SET DED TM PU-803	G35851	2	X	
NIGHT VIS GOG AN/PVS7B	N05482	NI VIS GOG AN/PVS-5	N04456	11,960	X	
RADIO SET AN/VRC-92A	R45407	RDO ST AN/VRC-49	Q55114	101	X	
RDO SET AN/PRC 119	R55268	RDO ST AN/PRC-77	Q38299	13	X	
RADIO SET AN/VRC-87A	R67160	RDO ST AN/VRC-64	Q56783	302	X	
RADIO SET AN/VRC-88A	R67194	RDO ST AN/GRC-160	Q34308	684	X	
RADIO SET AN/VRC-88A	R67194	RDO SET AN/VRC-88	R44727	3	X	
RADIO SET AN/VRC-90A	R67908	RDO ST AN/VRC-46	Q53001	1,307	X	
RADIO SET AN/VRC-90A	R67908	RDO SET AN/VRC-90	R45203	2	X	
STLR LB 22 1/2T M871	S70027	STLR LOW BED M172A1	S70517	318	X	
STLR LB 22 1/2T M871	S70027	SEMITRAILER STAKE: 12	S72024	675	X	
STLR VAN SUP M129A2C	S75175	STLR VAN CGO M119A1	S73531	62	X	
STLR VAN SUP M129A2C	S75175	STLR VAN CGO M128A2C	S74079	52	X	
STLR VAN SUP M129A2C	S75175	STLR VAN ELCT M348A2	S74216	4	X	
STLR VAN SUP M129A2C	S75175	STLR VAN ELCT M373A2	S74353	85	X	
TRAC WHLD DSL 4X4 EXCA	T34437	TRACTOR WHL IND (CCE)	W91074	12	X	
TRK CGO TACT W/W-LT CR	T39518	TRK CGO TACT W/LT CRAN	T59278	50	X	
TRK CGO TACT W/MED CRN	T39586	TRK CGO TACT W/W-LT CR	T39518	5	X	
TRK CGO TACT W/MED CRN	T39586	TRK CGO TACT W/W-M-CRN	T39654	16	X	
TRK CGO TACT W/MED CRN	T39586	TRK CGO TACT W/LT CRAN	T59278	65	X	
TRK TANK FUEL 2500G WW	T58161	TRK TANK FUEL 2500G	T87243	13	X	
TRK CGO TACT W/LT CRAN	T59278	TRK CGO TACT W/W-LT CR	T39518	20	X	
TRK UTIL 1 1/4 4X4 WE	T61494	TRK UTIL TACT 3/4T W/E	T05028	2,326	X	

ARNG
Major Item of Equipment Substitution List

Required Item Nomenclature	*Required Item Equip No.*	*Substitute Item Nomenclature*	*Substitute Item Equip No.*	*FY 2001 QTY*	*Deployable* *Yes*	*No*
TRK UTIL 1 1/4 4X4 WE	T61494	TRK CGO TACT 1 1/4T	T59346	1,650	X	
TRK UTIL 1 1/4 4X4 WE	T61494	TRK UTIL 1 1/4 4X4 WW	T61562	166	X	
TRK TANK FUEL 2500G	T87243	TRK TANK FUEL 2500G WW	T58161	205	X	
TRK UTIL ARMT 1 1/4T	T92310	TRK UTIL ARMT 1 1/4T	T92242	421	X	
TRAC FT HS ARMORED ACE	W76473	TRACTOR FT LS DED MED	W76816	1	X	
TRACTOR FT LS DED MED	W76816	TRACTOR FT LS DED MED	W83529	15	X	
TRACTOR FT LS DED MED	W83529	TRACTOR FT LS DED MED	W76816	258	X	
TRACTOR FT LS DED MED	W83529	TRACTOR FT W/BULDOZ	W88699	50	X	
TRUCK CARGO: DROP SIDE	X40931	TRUCK CARGO: DROP SIDE	X40794	132	X	
TRUCK CARGO: DROP SIDE	X40931	TRUCK CARGO: 5 TON 6X6	X40831	73	X	
TRUCK CARGO: DROP SIDE	X40931	TRUCK CARGO: 5 TON 6X6	X40968	50	X	
TRUCK CARGO: DROP SIDE	X40931	TRUCK CARGO: 5 TON 6X6	X41105	36	X	
TRUCK CARGO: DROP SIDE	X40931	TRUCK CARGO: 5 TON 6X6	X41242	12	X	
VIEWER INFRARED: AN/PA	Y03104	METASCOPE AN/PAS-6	M35691	5	X	

III. United States Army Reserve (USAR) Overview

a) Current Status of the United States Army Reserve

(1) General Overview: The Army has shown a sustained commitment to Army Reserve modernization by taking unprecedented strides to eliminate the USAR's historically large modern equipment backlog. By programming over a billion dollars over FY 2000-2005, the Army should reduce the USAR's equipment backlog by over one-half. The USAR simply has not seen this level of equipping support before. However, it must be emphasized that this is in the out years, and failure to execute this budget plan would prove disastrous to the USAR's modernization and future readiness.

The equipping and modernization of the Army Reserve remains a constant challenge with its large array of combat service support (CSS) equipment. To prevent further CSS degradation, the Army is in the process of developing a new CSS equipping policy.

The Army Reserve is equipped as a result of direct purchases of new equipment, by refitting and modernizing existing equipment, and through the limited cascading of equipment from the Active Component (AC). The Army has not dedicated many scarce procurement dollars to the acquisition of CSS equipment. This inability to strengthen more rapidly the Army's critical CSS "backbone" — either by new procurement to fill shortages or by initiating modernization or cascading — severely affects the capability of the USAR to fulfill its full wartime mission and its interoperability with the AC.

As the Army modernizes its weapon systems (the Army's highest priority equipment), the legacy systems are distributed to the Reserve components. Since the majority of this equipment is combat arms equipment, it is cascaded to the Army National Guard and not the Army Reserve.

Since Operation DESERT STORM, the Army Reserve has averaged less than 12 percent of the annual Reserve components' Procurement dollars, as identified in the P-1R exhibit to the President's budget. The P-1R is a subset of the Department of Defense Procurement Programs (P-1) exhibit and reflects the Service estimate for those funds that will be used to procure equipment for the National Guard and Reserve. (This does not include National Guard and Reserve Equipment Appropriation (NGREA) or Congressional Adds.) Since the P-1R is only a budget projection, fiscal resources, programmatic and priority changes may have revised the data shown below.

Although the trend in NGREA funding has been positive in the past, the decline in FY 1998 and FY 1999 required the Army to program additional procurement dollars for the RC. NGREA funding was down from $113.7M in FY 1997 to $73.7M in FY 1998 to $20M in FY 1999 and to $30M in FY 2000. Correspondingly, Service procurements for the RC was up. NGREA has been a tremendous asset in providing the flexibility to modernize the USAR's unique combat support/combat service support (CS/CSS) equipment. It has been a valuable program for the USAR to improve equipment readiness rates and purchase equipment which would not have been prioritized for procurement.

(2) Status of Equipment

(a) Equipment On-Hand: Overall, the USAR equipment on-hand (EOH) percentage has remained unchanged from last year. This may be attributed to a decrease in NGREA and Army procurement deliveries. It is anticipated that USAR shortages will continue through FY 2000 and beyond. Some early deploying Force Support Package (FSP) 1 & 2 units are short Equipment Requirement Code (ERC) A items (mission essential items) and mission critical/pacing items (ERC P), which cause a degradation of EOH readiness. The Army Reserve has 87 percent of its required pacing items and 89 percent of its ERC A items. These percentages include authorized substitute items of equipment. As such, some of the EOH may not perform as required by the unit's mission or be compatible with other EOH. The ERC A increase from 67 percent a year ago is attributable to various equipping readiness initiatives, such as getting priority equipment in the right units.

(b) Average Age of Major Items of Equipment: Several major items of equipment (MIE) in the USAR are near or past their Economical Useful Life (EUL). As a result, Operational and Sustainment (O&S) costs are increasing and equipment serviceability rates are decreasing, thereby, impacting unit readiness. The USAR has looked internally and concluded the majority of the equipment it currently has on-hand will be the only equipment it will have over the next ten years. Therefore, the USAR must rely on limited overhaul, rebuild, and conversion programs for existing equipment to improve modernization and retain mission capabilities past EUL.

(c) Compatibility of Current Equipment with AC: As a result of the incremental modernization of Army units, USAR equipment compatibility and unit interoperability will continue to require constant attention. Units assigned missions, irrespective of component, must be seamlessly integrated into contingency operations as well as wartime scenarios. Key to this integration is ensuring that equipment is both operationally and logistically compatible. Without this compatibility the ability to offer mutual support would be degraded and the effectiveness of the force would suffer. Modernization of USAR equipment is key to ensuring that this complex concern is mitigated as much as possible. Through RC equipment modernization, the variance between operational characteristics and logistical support requirements decrease and make it easier to integrate RC forces into operations. From a purely economical standpoint, modernization of RC equipment reduces associated requirements (training, spares, ammunition, etc.) needed to maintain a capability provided by an assortment of modern and legacy systems. The following items of equipment were identified as obsolete or incompatible during FY 1999.

Chart 1
FY 1999 USAR INCOMPATIBLE OR OBSOLETE EQUIPMENT

2 1/2 Ton Truck (M-35 Series)	Trailers
Maintenance Contact Truck (M-800 Series)	25 Ton Cranes
Medical Sets	75 Ton Asphalt Mixing Plant
Bath Units	4K Forklift, Rough Terrain
20 Ton Dump Truck	Laundry Units
Compactors, Plate/High-Speed	Materiel Handling Equipment

3/5/10 KW Generators	Yard Truck
Washing Plant	Bridge Transporter
Floodlight, Trailer Mounted	Dolly Sets
Boat Cradles	12-Series Radios

The Army's goal to improve compatibility incrementally within the constraints of its Total Obligation Authority (TAO) becomes an affordability dilemma. Additional modernization programs are procurements that offset, to some degree, Army funding shortfalls and insure RC first-to- fight/support units are first equipped. The trend over the last few years has been a positive move toward using NGREA to reduce equipment shortages in high priority RC units. However, with the decline of NGREA in the past few years and the projections that this trend will continue in future years, the Army must find additional dollars to support the RC. Because the RC is dealing with such limited dollars, creativity in developing ways to stretch these funds and extend the life of existing equipment is essential. The RC increasingly relies on limited overhaul and re-build programs of existing equipment to retain mission capabilities. Army digitization initiatives may accelerate incompatible and obsolete equipment; however, the Future Year Defense Plan (FYDP) only addresses the first digitized corps. This leaves USAR Echelon Above Corps (EAC) units at risk.

Some USAR units are short ERC-P and ERC-A items that prevent units from meeting their EOH readiness criteria. In addition, some of the current EOH does not perform as required or is not fully compatible with other equipment. Cross-leveling of equipment and upgrading existing equipment through refurbishment programs must be used to meet current equipment requirements. Additionally, the mechanism for identifying authorized substitute end items may need extensive review. These initiatives free some resources that are used to procure the highest priority requirements. The systems listed above reduce the effectiveness of training and readiness of USAR units because they are obsolete and incompatible. This problem is being addressed through the USAR's conversion and modification programs.

The USAR anticipates an improvement in FY 2000 and beyond in Army procured equipment for the USAR as well as increased funding of its depot maintenance programs. However, it should be noted that CS/CSS equipment requirements generally compete poorly with the more visible combat systems such as Comanche or Crusader.

The USAR operations into the 21st century, the digitized battlefield, and the Army After Next require equal consideration for modernization of equipment to ensure interoperability with the AC and ARNG. AC cascading of CS and CSS equipment to the USAR is currently minimal, with future planned force structure changes indicating no change to this trend. However, there will be a greater demand for these limited resources with the conversion of ARNG combat structure to CS/CSS through the Army National Guard Division Redesign (ADRS).

(d) Maintenance Programs

1. Field Level Maintenance: The operational readiness rate in the USAR is 95 percent for reportable equipment; however, only 9 percent of the equipment, which has significant maintenance concerns, is reportable. Readiness rates remain high because most of the

emphasis is provided on the reportable equipment. Furthermore, it is estimated that 44 percent of all USAR equipment is not receiving scheduled services due to shortages of manpower.

USAR maintenance activities, called Area Maintenance Support Activities (AMSA), will continue to perform unit level maintenance that is beyond the unit commander's capability or authorization to perform during schedule training assemblies. The maintenance activities are designated for ground support equipment, watercraft, or both ground and watercraft. Average staffing for the AMSAs is 10 - 12 personnel. Currently, AMSA shops are staffed at 56 percent of requirements based upon the density of supported equipment and its equivalent annual man-hours requirement to repair and/or service the equipment. This staffing delta is planned to be filled by contract field teams in FY 2000 and beyond.

In addition to AMSAs, USAR Equipment Concentration Sites have a maintenance branch with an area support mission, along with a storage branch for equipment beyond the capability of the owning unit commander to store, maintain, or utilize at home station.

2. National Level Maintenance: The USAR is dealing with such limited funding that it has been forced to become very creative in developing ways to stretch funds and extend the life of existing equipment. Increasingly, the USAR relies on limited overhaul and rebuild programs of existing equipment to retain mission capabilities. Upgrading of existing equipment through rebuild initiatives, using depot maintenance funds, has been used to extend the life of many items of equipment. Additionally, the Army Reserve is working hard with industry to infuse commercial design/concepts into its CSS improvement initiatives. This will allow the USAR to use commercial industry not only for the manufacture of CSS equipment, but also for follow-on rebuild/overhaul. The USAR fully understands the unique requirement for the maximization of all equipment funding sources. It encourages the Army to design equipment with an eye for remanufacture and pre-planned product improvements and to focus on non-developmental items.

3. Sustainment Initiatives: The following initiatives are examples of how the USAR has partnered with industry to design and implement total rebuild and refurbishment programs.

Heavy Expanded Mobility Tactical Truck (HEMTT) Common Bridge Transport (CBT)

In order to meet the requirements of the new Multi-role Bridge Company, the USAR initiated a program to convert HEMTTs to the CBT. The USAR is authorized five multi-role bridge companies with the CBT identified as a pacing item of equipment. This new organization combines both float and fixed bridging capabilities into one unit that will be a part of FSP 1 or 2. The CBT is the only vehicle that will perform this dual role with each company being authorized 56 CBTs. Thus far 240 conversions have been completed.

M915A4 "Glider" Line Haul Tractor

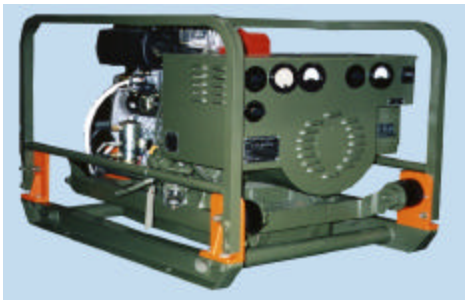
The M915A4 Glider Line Haul Tractor is a major success story for the Army Reserve. Testing has shown that the Glider supports Force XXI demands and provides higher performance, greater reliability, improved readiness and increased standardization. The USAR provided the lead to convert the Army's entire M915 5-ton truck tractor inventory using the Glider kit approach. It will provide the USAR with new trucks in months, not years, and will give Army Reserve soldiers hands-on experience and training while upgrading their unit's vehicles. The cost for a Glider is approximately one-half the cost of buying a new truck.

D7F Bulldozer

Remanufacture initiatives have not been limited to trucks. In 1998 the United States Army Reserve Command (USARC) conducted a comprehensive inspection and analysis of the USAR D7F Bulldozer fleet. The objective was to identify and document major safety & operational problems and determine general condition, level of effort, and materials necessary for repairs. Army Tank and Automotive Command (TACOM) along with industry designed and implemented a total rebuild program. Most of the Army Reserve's D7F Bulldozer fleet has been refurbished through this program.

M101A2, 3/4 Ton Trailer

This initiative upgrades a piece of equipment that has become obsolete by Active Army standards. The conversion is unique to the USAR and provides a trailer compatible with the High Mobility Multi-purpose Wheeled Vehicle (HMMWV). This provides increased transportability while handling larger loads and providing tracking compatibility with the HMMWV.



3 KW Generators

DoD has established the objective of a single fuel on the battlefield to enhance interoperability and safety. As a result, the USAR asked industry to design an easily applied conversion kit to convert its gasoline-driven generators to diesel fuel. USAR soldiers have successfully converted and fielded over 200 diesel generator sets and have achieved the objective set forth by DoD.

Rough Terrain Container Handler (RTCH):

The USARC conducted a comprehensive inspection and analysis of the USAR RTCH fleet. The objective was to identify and document major safety/operational problems and determine general condition, level of effort, and materials necessary for repairs. TACOM and industry designed and implemented a total rebuild program. This program basically took an obsolete piece of equipment, completely refurbishing it and returned a new system with warranty.

(e) Modernization Shortfalls: The Army must continue to strive to modernize the Reserve components along a timeline that ensures that the Total Force remains interoperable and compatible. Increased operational tempo (OPTEMPO) and diversion or migration of funds have stretched the useful life of equipment and reemphasized the need for re-capitalization and replacement of various systems. The following list reflects some of those items that are most critical to the USAR in supporting Army requirements. These requirements are high dollar items that meet the planned force structure initiatives of Total Army Analysis (TAA) 05 & 07.

CH-47 Aircraft

The mission of this aircraft is to transport weapons, ammunition, equipment, troops and other cargo in support of combat units and operations other than war. The current requirement for CH-47 aircraft is 64, with 51 currently on-hand. Six CH-47 aircraft are designated to be transferred to the USAR as a result of TAA 05 Force Structure actions. The USAR purchased one aircraft with NGREA funds with an anticipated delivery date in 2001. However, the USAR will still require six aircraft.

Apache AH-64D (Longbow) Conversion/Fielding

The AH-64 conversion to the "D" series increases the lethality, survivability, and capability of the Apache aircraft by adding a Fire Control Radar system and by upgrading to 701C engines and to the second generation of Forward Looking Infrared Radar. This increased capability reduces the number of aircraft required in a battalion from 24 to 18. Currently there are 48 Apache aircraft in the USAR.

M88A2 Hercules

The mission of the Hercules is to provide towing, winch and hoist operations to support battlefield recovery operations and evacuation of heavy tanks and other combat tracked vehicles. The Hercules is the primary recovery support to future heavy systems such as the M1 Breacher and the new armored vehicle launcher bridge. The total USAR requirement for the Hercules is 24.

Family of Medium Tactical Vehicles (FMTV)

The FMTV will replace over-aged and maintenance-intensive trucks currently in the medium tactical vehicle fleet. Typical missions include: line haul, local haul, unit mobility, unit re-supply and other missions in the combat, CS and CSS roles. The FMTV consists of a common truck chassis that is used for several vehicle configurations in two payload classes. The Light/Medium Tactical Vehicle (LMTV) is available in van and cargo variants and has a 2.5-ton payload capacity. The Medium Tactical Vehicle (MTV) has a 5-ton payload and consists of the following models: cargo, tractor, wrecker, and dump truck. Total USAR requirement for FMTV is 11,767.

High Mobility Multipurpose Wheeled Vehicle (HMMWV)

The mission of the HMMWV is to provide a common light tactical vehicle capability to the Army. The HMMWV replaces the Commercial Utility Cargo Vehicle. The average cost of the HMMWV is $45K. The total USAR requirement for HMMWV is 12,651.

HEMTT Fire Trucks & Water Tankers

The mission is to provide responsive, effective fire protection to aviation, ammunition and fuel dispensing units deployed in the field. These items will replace obsolete Modification of Commercial Item fire trucks which are maintenance intensive. The USAR has a requirement for 23 trucks @ $400K each for a cost of $9.2 million.

UH-60 Black Hawk

The Black Hawk is a utility, tactical transport helicopter capable of a wide variety of missions. The Black Hawk enhances mobility by improvements in troop capacity and cargo lift capability compared with the UH-1 "Huey" it replaces. The USAR will resource 3 General Aviation Companies requiring 24 aircraft at $11 million each for a total requirement of $264 million, dependent upon an increase in total obligation authority for the Army.

STAR-T

The Super High Frequency (SHF) Tri-Band Advanced Range Extension Terminal (STAR-T) is a Multi-Channel Tactical Satellite Terminal. Currently, the USAR has a requirement of 10 for fielding to a Tactical Satellite Company at a cost of $22.8 million.

The above section lists only a few of the major systems critical to the success of the USAR in supporting the Army warfighting requirements in the future. Additional USAR requirements are contained in a *Table 1*, Major Item Inventory and Requirements.

(f) Equipment Readiness: USAR units are improving at a rate slower than AC units primarily due to the lower placement of RC units on the Department of Army Master Priority List (DAMPL) and to reductions in Army procurement based upon declining budget authority. As a result, some early deploying FSP 1 and 2 units are short Pacing and ERC A equipment that prevent them from meeting EOH readiness criteria.

The USAR has 87 percent of required pacing items and 89 percent of ERC A items. Both percentages include equipment that are substitutes for authorized equipment. As such, some of the EOH may not perform as required by the unit's mission or be compatible with other on-hand equipment. The ERC P increase from 67 percent a year ago is attributable to equipping readiness initiatives. Cross-leveling of equipment and upgrading of existing equipment through rebuild initiatives have been used to extend the life of some items which allow dollars to be available to purchase other items required.

Although, there was three percent decrease in equipment readiness (ER) in FY 1999, the ER rating remains relatively high at 95 percent for reportable items. To improve equipment readiness and maximize limited resources, the USAR has initiated several programs to maintain the readiness of aging equipment. The USAR modification programs have always been the front runners in developing new and innovative ideas for equipment modernization. In working with our partners in industry and using some of the best troop labor to enhance training, the USAR continues to rebuild, upgrade, and overhaul its equipment. In FY 1999, the USAR converted or modified the following systems to enhance equipment readiness:

- 30 - 5-Ton cargo trucks to 5 Ton drop-side trucks.
- 50 - 3KW generators from gas to diesel engines.
- 60 - M915 Line Haul Tractors to the M915A4 Line Haul Tractor
- 295 - Gasoline engine 15 CFM compressors to the diesel engine
- 180 - M1037 HMMWV (Shelter Carriers) to M998 (Standard HMMWV)
- 41 - Bath and shower units to "Like New" configuration.
- 27 - HEMTTs to Common Bridge Transporters.
- 43 - M967A1 fuel tankers to M967A1 multi-functional fuel tankers.
- 9 - M101A1 Trailers to the M101A2, and nine M101A2 to the M101A3.
- 12 - AVLBs MLC 70 Upgrades.

The USAR's acquisition plan for purchasing new equipment with NGREA is in line with known Army modernization plans. The following equipment was purchased with NGREA funds and delivered in FY 1999:

ATLAS All Terrain Forklift 10K	HEMTT Common Bridge
HEMTT Fuel Tanker	Transporter (CBT)
2 ½ Ton Truck ESP	HMMWV CMT
HEMMT Wreckers	Small Arms Simulators
Laser Level Systems	SINCGARS Radio Conversions
ROWPU	PLS Trailers

The following equipment was purchased with NGREA funds during FY 1999 for delivery in future fiscal years:

CH47D Chinook	HEMTT Common Bridge Transporters
SAMS-I/TDA	Hydraulic Excavator, Type 1
M915A3 Truck Tractors	All Terrain Cranes (ALTEC) 20T
AN/PVS 7D Night Vision Goggles	HMMWV Contact Maintenance Trucks
Floodlight Sets	Semi-Trailers M871A3
Modern Burner Units	Yard Tractors M878
2 ½ Ton Truck ESP	Generator Sets 60 KW TQG

Through the 2½ ton cargo truck Extended Service Program (ESP), funded with FY 1996 NGREA funds, the USAR will receive approximately 500 ESP trucks These rebuilt vehicles will increase the service life of existing 2½ ton vehicles, reduce the operating costs of the fleet, and provide a deployable and supportable vehicle to units in FP 3 and FP 4.

(g) Other Equipment Specific Issues

1. Tactical and Support Vehicles: . The USAR continues to identify other specialized vehicles that will require some type of modification over the next six years. During FY 1999 the USAR committed $2.8 million on the procurement of Combat Bridge Transporter (CBT) conversion kits and completed its modernization program of HEMTT CBTs for the USAR's new multi-role bridge companies. A second item of modernization was the M915A4 Truck Tractor (Glider). The USAR procured 69 Glider Kits with FY 1999 NGREA funds, at a cost of $4.8 million. The Glider Kit provides an old M915 truck with a new automatic transmission, new chassis and cab, front axle, tires, and a variety of modern technical insertions at little more than half the cost of a new M915A3 Truck Tractor. This program continues the efforts of the FY 1997 and FY 1998 M915A4 programs. A third item in the FY 1999 modernization program is the Contact Maintenance Truck, with $5.3 million programmed. This will provide an improved maintenance shelter mounted on a HMMWV provided by the Army. The vehicles support the modernization of USAR Ordnance and Engineer units. Additional modernization programs are procurements that supplement Army funding and insure that USAR first to fight/support units are first equipped.

2. Communication-Electronic Equipment: The USAR has a total requirement for 7,093 Global Positioning Systems (GPS). The USAR, while maintaining 13 percent of the Army’s go to war signal capability, requires extensive support to bring the USAR into the 21st Century. The USAR requires Single Shelter Switch, Super High Frequency Tri-Band Advanced Range Extension Terminal equipment and Enhanced Position Location Reporting Systems to remain capable and compatible with the AC signal units. It is essential that Command, Control, Communication and Computer (C4) modernization equipment is fielded concurrently to the USAR to ensure a totally seamless digitized force.

As overall procurement dollars decline, funding CS/CSS equipment becomes even more difficult. An alternative source is needed to provide that flexibility to USAR equipping. The USAR is communicating its needs and requirements known to the Army for

inclusion in the FYDP and P-1R. NGREA has helped tremendously to improve the USAR's equipment on hand readiness. NGREA or other equipment infusion is required to preclude readiness deterioration in the future.

Major systems projected for receipt by the Army Reserve in FY 2000 and beyond as a result of DA buys, NGREA, or modification/ rebuild programs include:

- CH 47 Cargo (MODS)
- Family of Medium Tactical Vehicles (FMTV).
- High Mobility Multipurpose Wheeled Vehicles (HMMWV)
- HEMTT Fire trucks
- SINCGARS
- M109 Shop Vans
- M915 Line Haul Tractor
- AVLBs MLC 70 Upgrades
- M967A1 Fuel Tankers
- M101A1 trailers to M101A2, A3s.
- C-12 Cargo (MODS)
- Semi-trailer, Tank 5K, 7.5k
- M915A3 Tractor
- Palletized Loading Systems
- Night Vision devices
- Generator Sets , Multiple
- Rough Terrain Container Crane
- Rough Terrain Container Handler
- Hydraulic Excavator

b) Changes Since Last NGRER: The USAR understands the unique requirement for maximizing all equipping sources, such as Army Procurement (P1-R), the NGREA, the cascading of equipment from the AC, and depot maintenance.

The NGREA appropriation is an invaluable tool, which makes resources available to the USAR above and beyond the President's budget. It offers the most flexible and direct method of procuring modern CS/CSS equipment. It also enhances equipment interoperability with the AC through modernization while increasing EOH readiness percentages.

During the past several years, Congressional adds for NGREA have been reduced from a little more than $113 million in FY 1997 to $30 million in FY 2000. Of greatest concern to the USAR, is the loss of flexibility to field equipment at the discretion of the Chief Army Reserve (CAR) based on mission and out of DAMPL sequence requirements.

In order to adjust to these decreases, the Army must program for all USAR and ARNG requirements in the FYDP. The RC can no longer afford to rely totally on Congressional adds in the NGREA. This will take time since the largest budget changes are more easily programmed

in the out years, while the near term budget is more suited to smaller budget fixes. Overall, the RC's greatest fear is that the fixes programmed in the out years will not be funded. Consequently, the Army procurement plan identified for USAR fielding in the P1-R must be monitored closely to ensure proper execution. As a result, this information will be highlighted in *Table 6* attached.

The amount of equipment cascaded from the AC to the USAR is limited, since the USAR is largely comprised of CSS units, while the majority of cascaded equipment is combat arms weapons systems. Frequently, the equipment that is cascaded to the USAR is in need of repair, and the resources required to repair or refurbish this equipment must be taken from other programs. In addition, there are no formal tracking procedures within DA to compare what was projected and what is actually received; consequently, the RC's must track their own equipment transfers.

Chart 2 below reflects changes in the equipping sources from FY 1994 to FY 2001.

Chart 2
EQUIPMENT FUNDING SOURCES, FY 1994 TO FY 2001

FUNDING SOURCE ($M)	**FY94**	**FY95**	**FY96**	**FY97**	**FY98**	**FY99**	**FY00**	**FY 01**
Cascaded Equip from AC	$225.00	$217.70	$160.20	$125.00	$25.00	$75.00	$54.70	TBD
Service Procured--P1-R *	$251.20	$149.00	$151.30	$76.90	$80.30	$135.20	$176.00	174.20
NGREA	$100.00	$133.00	$90.00	$113.70	$73.70	$20.00	$30.00	TBD
TOTAL:	$576.20	$499.70	$401.50	$315.60	$179.00	$230.20	$260.70	TBD

* Includes Congressional Adds to AC Accts for the RC.

c) Future Years Program (FY 2001 – 2003)

(1) FY 2003 Equipment Requirements: Requirements identified under Modernization Shortfalls in section (e) above continue through FY 2003 and beyond, as these items are high dollar items that meet the planned force structure initiatives of TAA 05 & 07.

(2) New Equipment Procurements: *Table 3* at the end of this section reflects the service-planned procurements as identified in the P-1R exhibit to the President's budget. Although these items do not reflect all required items of equipment, this list is a significant improvement in procuring equipment shortfalls as compared to prior year procurement tables.

(3) Transfers from AC to RC: *Table 5* reflects USAR projected equipment transfers/cascaded equipment from the AC to the USAR. A major USAR concern that is being addressed by the Army is the condition of equipment that is cascaded to the RC. Progress is being made to insure that cascaded equipment receives the necessary rebuild prior to issuance to the RC.

(4) Withdrawals from RC Inventory: *Table 5* also reflects equipment which is obsolete or incompatible that is programmed for withdrawal from the Army Reserve inventory.

(5) Equipment Shortages and Modernization Shortfalls: See *Chart 3* on the next page which reflects projected equipment shortfalls as a result of USAR Force Structure actions through FY 2005.

(6) Effects on Overall Readiness: Shortages of common systems such as HMMWV's, C4I items and FMTV are detractors to both readiness and training. Compatibility of equipment is and will continue to be a problem for communications and logistical support systems. In order to ensure maximum compatibility of high-priority units, equipping is based on a force packaging match using the "first to fight" principle. This works well for Army Reserve units planned for early deployment in either combat or support roles, but creates a problem with later deploying units which have older substitute equipment. In our current environment, Army Reserve units that are later deployers for a crisis often are early deployers for peacetime engagement.

(7) Authorized Substitutes of Major Items of Equipment (MIE): *Table 7* reflects data regarding authorized substitutes for MIE. The increase use of authorized substitutes for CSS MIE in the USAR impacts the capability to remain compatible with the AC. As the AC continues to modernize and the USAR OPTEMPO continues to increase, Army Reserve equipment incompatibility and unit interoperability will become a bigger challenge. In many cases, substituted equipment is at or near obsolescence, and requires intensive maintenance management, thereby, increasing Operational and Sustainment (O&S) costs, while reducing training and readiness effectiveness.

d) Remaining Shortfalls and Unfunded Requirements

(1) Out-year FYDP Procurements (FY 2004 – 2005)- The Army P1-R (Procurement Programs - Reserve Component exhibit) report projects the Army Reserve will receive limited quantities of modern equipment during FY 2004 and FY 2005. Although the distribution is limited, certain items are crucial to Army Reserve modernization. In particular, HEMTT chassis tactical fire trucks, FMTV and 50K rough terrain forklift projected deliveries will replace aging equipment in high priority, high demand Army Reserve units. Critical logistics enablers however, such as electric forklifts, CSS automation systems and communications equipment, remain under funded for the Army Reserve.

Chart 3 on the next page identifies projected equipment shortfalls through FY 2005. The chart includes modernization items such as the FMTV and FLTV which were not included in the total shortfalls list in *Charts 2 and 3*, Chapter 1.

Chart 3

PROJECTED EQUIPMENT SHORTFALLS THROUGH FY 2005

EQUIPMENT ITEM	REQ QTY	O/H QTY	P-1R BUY	REMAINING SHORTAGE	TOTAL COST
UH-60L BLACK HAWK HELICOPTER	24	0	0	24	264,000,000
FLTV 2.5-TON TRUCK	4851	162	1979	2710	345,375,950
FMTV 5-TON TRUCK	6916	0	2935	2981	476,960,000
HMMWV	12651	7299	230	5122	253,170,216
FIRE TRUCK – HEMTT	78	0	0	78	31,200,000
HELICOPTER CH-47 CHINOOK	64	51	7	6	150,000,000
M915A3 TRUCK TRACTOR	2436	1926	303	207	27,945,000
NIGHT VISION PVS-7	35378	19366	0	16012	44,849,612
HERCULES	24	0	0	24	65,972,304
ARMORED SECURITY VEHICLE (ASV)	255	0	0	255	142,290,000
TRACTOR, YARD	141	92	28	21	1,901,529
ALL TERRAIN LIFT ART SYS (ATLAS)10K	875	228	331	316	31,662,884
CONT HAND, RGH TERRAIN 53K	237	88	32	117	61,425,000
M56 (COYOTE) GENERATOR, SMOKE	600	0	216	384	55,680,000
GENERATOR SET, TRL MTD 6OKW	34	13	0	21	504,000
WELDING SHOP, TRAILER MTD	147	46	0	101	4,368,250
LIGHT EQUIP TRAN TRUCK M916A2	225	200	0	25	4,425,000
HYDRAULIC EXCAVATOR	56	31	12	13	3,494,972
GENERATOR SET, DIESEL, (TQG)	5186	545	0	4641	31,795,491
GLOBAL POSITIONING SYSTEM	5176	4861	0	315	419,265
CONT ASSEM REFRGERATION 9K BTU	95	65	0	30	1,749,780
MODERN BURNER UNIT (MBU)	5115	1365	0	3750	10,125,000
ROLLER, VIB, SELF-PROP TYPE II	128	48	24	56	3,080,000
HIGH FREQUENCY (HF) RADIO	578	64	0	514	20,560,000
SUPER HF TRIBAND ADV RNG EXT TERM (STAR-T)	33	0	0	33	35,532,750
COMMON BRIDGE TRANS (CBT) KITS	342	286	23	33	3,300,000
TOTAL					**$2,071,787,003**

(2) Other Requirements Not Addressed in the FYDP - As the Army transitions based on CSA's vision, there will undoubtedly be changes to the current FYDP projections. Future readiness is directly linked to modernization and upgrading of equipment. Increased mission requirements in recent years have forced the Army to accept risk in modernization. Because of funding constraints, procurement programs have been maintained at minimum sustaining rates rather than at more efficient economic rates. As the FYDP is modified, it will be critical that the integration of the active and reserve components into a "seamless' force continues with appropriate modernization to ensure interoperability and compatibility.

e) Summary: The Army is programming funds for RC equipment in its primary procurement account (P1-R) rather than relying on the NGREA. The Army spends approximately 10 percent of procurement dollars on CSS equipment. This shortfall in CSS procurement results in significant equipment unfinanced requirements that greatly impact the USAR, which provides the greatest percentage of CSS units to the Army. With increased deployments, continual equipment cross leveling is required to meet mission requirements.

Shortages of new and modern equipment prevent units from being able to train and to fully integrate with the other units they support. It is imperative the USAR receive higher priority for CS/CSS equipment to maximize support of the combat systems. The Army must modernize the RC along a timeline that ensures the Total Force remains interoperable and compatible. Equipment modernization reduces the variances in operational characteristics and logistical support requirements and facilitates the integration of RC forces into CS operations.

Increased OPTEMPO and diversion or migration of funds have stretched the useful life of equipment and reemphasized the need for re-capitalization and replacement of various systems. Since many USAR units are not the first-to-fight/support, they receive equipment after the first-to-fight/support units under the tiered resourcing strategy of the Army. Those USAR units which are first-to-fight/support are the first resourced. This requires cross-leveling of equipment if a non first-to-fight unit is deployed for a contingency operation in place of a traditional first-to-fight unit.

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Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
AIRPLANE,CARGO,C-12R	A30062	3,068,422	31	31	31	31	**40**
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	2,357	4,036	0	0	0	**27**
ALARM BIOLOGICAL AGENT AUTOMATIC MODERNI	A48430	785,483	35	35	35	35	**175**
ANESTHESIA APPARATUS,GAS	A62773	30,000	128	0	0	0	**156**
BATH UNIT,PORTABLE,8-SHOWER	B43663	8,186	153	105	105	105	**90**
BED,CARGO,DEMOUNTABLE FLATRACK (PLS)	B83002	16,633	1,988	1,988	1,988	1,988	**2,010**
CHEMICAL AGENT MONITOR	C05701	7,500	1,240	3,962	4,225	4,225	**1,099**
BRIDGE ERECTION SET,FIXED	C22058	43,944	2	0	0	0	**0**
BRIDGE ERECTION SET,MEDIUM GIRDER	C22126	488,354	7	7	7	7	**12**
BRIDGE FIXED,HIGHWAY,100 FEET	C22811	964,515	11	13	13	13	**24**
BRIDGE FIXED,HIGHWAY,BAILEY TYPE	C23017	303,673	1	5	5	5	**0**
CLEANER,STEAM,PRESSURE,TRAILER MTD	C32887	18,528	252	119	119	119	**20**
CRANE,WHEEL MOUNTED,7-1/2T	C36151	58,481	141	128	128	128	**41**
CRANE,WHEEL MOUNTED,ROUGH TERRAIN	C39398	210,857	80	96	96	96	**45**
TELEPHONE,CENTRAL OFFICE AN/TTC-39A	C41311	2,801,000	10	7	9	9	**12**
SIMPLE COLLECTION PROTECTION EQUIPMENT M	C79000	8,350	18	16	16	16	**12**
DETECTOR SET,RADAR AN/APR-39A	D03159	39,984	89	78	78	78	**96**
DISTRIBUTOR,WATER TANK,6000 GAL,TRLR MTD	D28318	30,289	86	73	73	73	**120**
DIVE EQUIPMENT,SCUBA,TYPE A	D32859	7,005	4	2	2	2	**0**
DIVE EQUIPMENT,SCUBA,TYPE B	D32927	55,753	5	2	2	2	**0**
DIGITAL DATA GENERATOR SG-1139/G	D37041	5,100	49	67	77	77	**81**
DRUM,FABRIC,COLLAPSIBLE,WATER,500 GAL	D69050	2,088	468	403	403	403	**534**
DECONTAMINATING APPARATUS,LIGHT WEIGHT M	D82404	15,192	824	1,244	1,376	1,376	**600**
DEFIBRILLATOR MONITOR	D86072	8,022	206	171	171	171	**397**
ELECTRONIC KEY GEN DEVICE TSEC/KG-81	E03123	8,226	81	45	45	45	**56**
COMMUNICATIONS TECH AN/TSQ-84 LP	E60197	100,000	1	1	1	1	**3**
COMPACTOR,HIGH SPEED	E61618	135,005	87	80	80	80	**58**
ELECTRONIC KEYING DEVICE KYK-13/TSEC	E98103	235	3,475	3,138	3,149	3,149	**1,085**
COUNTER ELECTRONIC DIGITAL READ AN/USM-2	F19198	6,830	5	6	6	6	**0**
BARGE,CRANE,FLOATING	F36090	15,000,000	5	5	5	5	**4**
CRANE,WHEEL MOUNTED,20T	F39378	162,393	70	17	17	17	**58**
CRANE-SHOVEL,CRAWLER MOUNTED	F40474	270,000	10	7	7	7	**16**
FORWARD AREA WATER POINT SUPPLY SYSTEM	F42612	19,484	74	102	102	102	**98**
CRANE,TRK MTD HYD,25T	F43429	160,953	98	98	98	98	**43**
FLOODLIGHT SET TRAILER MOUNTED	F79334	4,489	352	90	196	196	**21**
DECONTAMINATION APPARATUS,SKID MOUNTED	F81880	21,626	103	111	111	111	**0**
DELOUSING OUTFIT,PWR DRIVEN,10 GUN	F89168	1,349	16	15	15	15	**0**
DETECTING SET,MINE AN/PSS-12	G02341	2,944	1,948	2,138	2,155	2,155	**1,216**
GENERATOR,5KW,60HZ,SKID MTD (TQG)	G11966	8,145	1,088	475	475	475	**680**
GENERATOR,60KW,50/60HZ,SKID MTD (TQG)	G12034	20,903	87	137	137	137	**161**
GENERATOR,15KW,50/60HZ,SKID MTD (TQG)	G12170	16,160	116	44	44	44	**12**
GENERATOR PWR UNIT,30KW,60HZ,TRLR MTD (T	G35851	21,000	88	26	26	26	**102**
GENERATOR PWR UNIT,10KW,60HZ,TRLR MTD (T	G42170	13,000	124	134	135	135	**144**
GENERATOR SET,SMOKE,MECHANICAL M157	G51840	26,622	456	456	456	456	**456**
GENERATOR PWR UNIT,15KW,60HZ,TRLR MTD (T	G53778	21,000	216	98	99	99	**168**
GENERATOR,30KW,50/60HZ,SKID MTD (TQG)	G74575	19,499	85	54	55	55	**58**
GENERATOR,10KW,60HZ,SKID MTD (TQG)	G74711	6,979	454	501	501	501	**831**
GRADER,ROAD,MOTORIZED,HEAVY	G74783	67,724	242	220	220	220	**206**
GENERATOR PWR UNIT,60KW,60HZ,SKID MTD (T	G78306	24,000	77	32	32	32	**66**

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Table 1

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NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
ELECTRONIC SHOP AN/ASM-189LP	H01855	169,817	82	108	108	108	**74**
ELECTRONIC SHOP,AVIONICS AN/ASM-146	H01907	87,418	106	102	104	104	**125**
ELECTRONIC SHOP,AVIONICS AN/ASM-147	H01912	63,212	29	47	47	47	**33**
HELICOPTER,ATTACK AH-64 (APACHE)	H28647	10,680,000	45	45	45	45	**48**
HELICOPTER,CARGO CH-47D (CHINOOK)	H30517	24,800,000	51	53	53	53	**64**
RADIO SET,HF AN/GRC-193A	H35404	37,000	310	84	99	99	**557**
FILTER SEPARATOR,LIQUID,350 GPM	H52087	4,041	1,224	1,366	1,367	1,367	**1,364**
FORWARD AREA REFUELING EQUIPMENT	H94824	9,093	114	142	147	147	**162**
FUEL SYSTEM SUPPLY POINT,60K GAL	J04717	22,435	244	146	146	146	**367**
GENERATOR,SMOKE,MECHANICAL PULSE	J30492	8,500	488	681	681	681	**56**
GENERATOR SET,DIESEL ENGINE,5KW	J35813	8,332	337	937	937	937	**71**
GENERATOR SET,DIESEL ENGINE,10KW	J35825	13,635	286	501	501	501	**105**
GENERATOR SET,DIESEL ENGINE,30KW	J36383	20,810	74	174	174	174	**17**
GENERATOR SET,DIESEL ENGINE,200KW	J40150	19,204	4	0	0	0	**4**
GENERATOR SET,DIESEL ENGINE,200KW	J40158	49,440	9	10	10	10	**0**
GENERATOR SET,GAS ENGINE,3KW	J45699	4,491	293	378	379	379	**33**
HYPOCHLORINATION UNIT	K60988	14,342	51	35	35	35	**26**
INSTRUMENT REPAIR SHOP M185A3	K90188	94,021	19	31	31	31	**0**
INTERIOR BAY BRIDGE,FLOATING	K97376	41,940	149	209	209	209	**180**
LABORATORY,PETROLEUM,SEMITRAILER MTD	L33800	650,000	12	12	12	12	**17**
LANDING CRAFT,MECHANIZED (LCM-8)	L36739	162,612	48	6	6	6	**22**
LANDING CRAFT,UTILITY (LCU 1600)	L36876	1,530,000	6	0	0	0	**1**
LANDING CRAFT,UTILITY,RO/RO (LCU 2000)	L36989	5,000,000	14	14	14	14	**30**
LASER,INFRARED,OBSERVATION SET AN/GVS-5	L40063	4,879	9	8	8	8	**0**
LAUNDRY UNIT,TRAILER MOUNTED	L48315	42,516	254	186	186	186	**360**
LIGHTER AMPHIBIOUS,60 TON (LARC-60)	L67508	390,000	12	0	0	0	**4**
LIGHTWEIGHT DIGITAL FACSIMILE AN/UXC-7	L67964	21,972	752	828	838	838	**181**
LOADER,SCOOP,5CY	L76321	75,450	61	51	51	51	**53**
LOADER,SCOOP,2-1/2CY	L76556	58,890	170	179	179	179	**143**
MEDICAL MATERIEL SET,CENT MATERIEL (DEPM	M08417	266,781	55	45	45	45	**78**
MEDICAL MATERIEL SET,INT CARE (DEPMEDS)	M08599	55,544	220	73	73	73	**260**
MACHINE GUN,5.56MM M249 (SAW)	M09009	2,653	11,909	13,006	13,022	13,022	**3,725**
MEDICAL MATERIEL SET,POST-OP/ICU (DEPMED	M09576	152,519	371	371	371	371	**104**
MASK,CBR PROTECTIVE,FIELD,M17	M11895	93	23,651	43,258	43,258	43,258	**11,292**
MASK,CHEMICAL BIOLOGICAL M40	M12418	95	197,725	154,700	155,272	155,272	**149,590**
MOUNTING KIT,SMOKE GENERATOR M284	M17931	2,246	624	444	444	444	**456**
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	135	2,180	3,998	4,003	4,003	**1,933**
MEDICAL EQUIPMENT SET SICK CALL FIELD (2	M30156	7,418	24	41	43	43	**4**
MEDICAL EQUIPMENT SET TRAUMA FIELD (2)	M30499	13,383	37	62	64	64	**4**
MIXING PLANT,ASPHALT	M57048	1,170,050	4	4	4	4	**4**
MEDICAL MATERIEL SET,X-RAY (DEPMEDS)	M72300	240,205	47	33	33	33	**26**
MEDICAL MATERIEL SET,LAB (DEPMEDS)	M72482	200,320	51	25	25	25	**0**
MEDICAL MATERIEL SET,OP ROOM (DEPMEDS)	M72936	263,406	122	122	122	122	**78**
MINI EYESAFE LASER INFRARED OBS SET AN/P	M74849	8,549	6	0	0	0	**90**
MEDICAL MATERIEL SET,X-RAY (DEPMEDS)	M86675	135,000	3	1	1	1	**26**
LAUNCHER,GRENADE,40MM,MARK 19-3	M92362	15,320	1,602	1,805	1,833	1,833	**1,511**
MACHINE GUN 7.62MM M240C	M92420	4,890	0	131	131	131	**4**
NET CONTROL DEVICE,KYX-15/TSEC	N02758	2,300	1,836	1,605	1,608	1,608	**497**
NIGHT VISION GOGGLES N/PVS-5	N04456	4,300	309	1,176	1,178	1,178	**320**
NIGHT VISION SIGHT AN/PVS-4	N04732	2,839	4,469	4,214	4,224	4,224	**1,114**
NIGHT SIGHT EQUIP THERIMG	N04982	61,791	20	20	20	20	**20**
NIGHT VISION SIGHT AN/UAS-11(V)1	N05050	69,641	0	0	0	0	**23**
NIGHT VISION GOGGLES AN/PVS-7B	N05482	3,578	15,952	14,538	15,099	15,099	**5,570**
NIGHT VISION SIGHT AN/TAS-5	N23721	23,099	25	52	70	70	**18**

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Consolidated Major Item Inventory and Requirements

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
PLATE PROCESS SECTION,TOPO	P06082	57,423	1	1	1	1	**0**
OPERATING AND TREATMENT OUTFIT,DENTAL	P19377	6,705	103	0	0	0	**0**
POWER PLANT AN/MJQ-10	P27819	45,447	38	85	85	85	**15**
GENERATOR PWR PLANT,5KW,60HZ,TRLR MTD	P28083	11,000	27	12	12	12	**0**
GENERATOR PWR PLANT,5KW,60HZ,TRLR MTD	P28151	20,000	14	4	4	4	**6**
OSCILLOSCOPE AN/USM-488	P30693	2,084	369	505	505	505	**191**
POWER SUPPLY PP-6224/U	P40750	1,491	1,593	1,462	1,466	1,466	**1,213**
GENERATOR PWR PLANT,30KW,60HZ,TRLR MTD	P42126	46,000	57	34	34	34	**53**
GENERATOR PWR PLANT,60KW,60HZ,TRLR MTD	P42194	35,000	12	2	2	2	**2**
GENERATOR PWR PLANT,10KW,60HZ,TRLR MTD	P42262	30,000	126	51	51	51	**86**
PRESS SECTION,TOPO REPRODUCTION SET	P50154	450,000	4	4	4	4	**0**
PRINTING PLANT,SPECIAL WARFARE	P61665	283,221	11	12	12	12	**10**
PUMP CENTRIFUGAL,125 GPM	P92030	2,267	1,270	615	615	615	**1,215**
PUMP ASSEMBLY,ENG DRVN,FLAM LIQ,350 GPM	P97119	26,244	78	52	52	52	**180**
PUMPING ASSEMBLY,TACTICAL WATER	P97369	27,426	80	68	68	68	**210**
PROCESSING MACHINE,RAD FILM	P98514	10,795	41	34	34	34	**52**
RADIACMETER IM-93/UD	Q20935	73	5,861	5,658	5,784	5,784	**1**
RADIO SET AN/GRC-106	Q32756	18,602	197	241	241	241	**517**
RADIO TELETYPE SET N/GRC-122	Q90100	52,347	11	8	8	8	**0**
RAMP BAY BRIDGE,FLOATING	R10527	47,040	57	80	80	80	**72**
RAMP LOADING VEHICLE,16K LB	R11154	7,229	351	294	294	294	**148**
RADIO SET AN/GRC-213	R30895	20,000	102	142	151	151	**122**
RADIAC SET AN/PDR-75	R30925	2,978	685	716	718	718	**2**
REPEATER SET,RADIO AN/TRC-174B	R39520	519,000	35	22	23	23	**34**
RADIO TERMINAL SET AN/TRC-175B	R39588	640,000	13	8	8	8	**11**
RADIO SET AN/VRC-89 (SINCGARS)	R44795	14,828	14	4	4	4	**0**
RADIO SET AN/VRC-89A (SINCGARS)	R44863	22,822	1,231	1,434	1,449	1,449	**1,249**
RADIO SET AN/VRC-90 (SINCGARS)	R45203	8,576	248	21	21	21	**1**
RADIO SET AN/VRC-92 (SINCGARS)	R45339	15,597	6	0	0	0	**0**
RADIO SET AN/VRC-92A (SINCGARS)	R45407	21,238	436	622	693	693	**1,085**
RECOVERY VEHICLE,FT MDM M88A1	R50681	1,210,755	47	65	66	66	**18**
RADIO SET AN/PRC-104A	R55200	12,500	152	47	47	47	**2**
RADIO SET AN/PRC-119 (SINCGARS)	R55268	6,418	16	13	13	13	**0**
REFRIGERATOR UNIT,10000 BTU	R61428	9,156	109	174	174	174	**210**
RADIO SET AN/VRC-87A (SINCGARS)	R67160	12,109	442	618	620	620	**354**
RADIO SET AN/VRC-88A (SINCGARS)	R67194	12,519	2,436	1,780	1,909	1,909	**1,241**
RADIO SET AN/VRC-90A (SINCGARS)	R67908	13,178	5,472	6,293	6,555	6,555	**6,686**
RADIO SET AN/VRC-91A (SINCGARS)	R68010	23,249	1,680	1,725	1,754	1,754	**1,833**
RADIO SET AN/VRC-119A (SINCGARS)	R83005	10,117	1,681	2,151	2,168	2,168	**722**
RADIO TERMINAL SET,HEAVY TROPO AN/TRC-17	R92967	2,000,000	8	16	16	16	**16**
RADIO TERMINAL,AN/TRC-170V3,LT TROPO SYS	R93035	1,000,000	16	16	16	16	**16**
RIFLE,5.56 MM M16A2	R95035	449	114,228	114,228	114,228	114,228	**26,603**
SPEECH SECURITY EQUIPMENT TSEC/KY-57	S01373	1,929	1,517	1,634	1,634	1,634	**149**
SPECTRUM ANALYZER AN/USM-489(V)1	S01416	15,930	10	14	17	17	**40**
SPEECH SECURITY EQUIPMENT TSEC/KY-58	S01441	3,062	215	202	202	202	**212**
SEMITRAILER,TANK,5000 GAL M967	S10059	77,550	941	941	941	941	**1,080**
ROLLER,TOWED,VIBRATING,5TON	S10682	17,086	8	7	7	7	**45**
ROLLER PNEUMATIC,VARIABLE PRESSURE	S11793	28,706	43	42	42	42	**0**
ROLLER,VIBRATORY,SELF PROPELLED,HIGH IMP	S12916	45,183	64	66	66	66	**98**
SANITATION CENTER,FOOD	S33399	12,735	808	227	289	289	**0**
SCRAPER,EARTH MOVING	S56246	119,182	254	239	239	239	**223**
SEMITRAILER,22-1/2 TON M871	S70027	24,483	1,145	1,338	1,340	1,340	**1,603**
SEMITRAILER,FB,TRANSPORTR,34T	S70159	20,004	2,961	2,961	2,961	2,961	**3,072**
SEMITRAILER,FUEL SVC,5000G	S72983	15,064	6	22	22	22	**77**

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NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
SEMITRAILER,TANK,PETRO	S73119	30,165	560	560	560	560	**1,020**
SEMITRAILER,TANK,5000G M969	S73372	97,413	495	494	494	494	**625**
SEMITRAILER,VAN,CGO M128A2C	S74079	7,111	15	41	41	41	**0**
SEMITRAILER,VAN,ELECTRONIC M373A2	S74353	24,125	4	10	10	10	**3**
SEMITRAILER,VAN,RPR STOR,6T	S74832	32,952	100	114	116	116	**130**
SEMITRAILER,VAN SUP M129A2C	S75175	84,466	444	553	554	554	**377**
TESTING KIT PETROLEUM MODERNIZATION SYST	T05741	4,565	105	177	183	183	**199**
TRUCK,UTILITY,SHELTER CARRIER (HMMWV)	T07543	36,932	779	867	867	867	**599**
TRUCK,UTILITY,HEAVY VARIANT (HMMWV)	T07679	58,374	228	333	333	333	**837**
TACTICAL WATER DISTRIBUTION EQUIPMENT SE	T09094	660,000	14	13	13	13	**35**
SHOP EQUIPMENT,CONTACT	T10138	16,361	33	23	23	23	**16**
TANK ASSY,FABRIC,COLLAPSIBLE,20K GAL,POL	T12620	6,065	487	301	301	301	**648**
TANK ASSY,FABRIC,COLLAPSIBLE,WATER,3K GA	T19033	2,377	1,568	1,541	1,541	1,541	**1,670**
SHOP EQUIPMENT,AUTOMOTIVE MAINT	T24660	103,658	56	65	65	65	**47**
SHOP EQUIPMENT,AUTOMOTIVE MAINT	T25619	48,796	46	62	62	62	**42**
SHOP EQUIPMENT,AUTOMOTIVE MAINT	T25756	115,964	9	10	10	10	**21**
TOOL OUTFIT,HYDRAULIC SYSTEMS	T30377	83,000	51	46	46	46	**51**
SMALL EMPLACEMENT EXCAV W/FRONT LOAD	T34437	69,643	354	355	355	355	**382**
TRUCK,AMBULANCE,M996,2-LITTER (HMMWV)	T38707	49,357	7	33	33	33	**0**
TRUCK,AMBULANCE,M997,4-LITTER (HMMWV)	T38844	74,168	415	517	517	517	**168**
TRUCK,CARGO,TACTICAL,W/W-LT CR (HEMTT)	T39518	193,789	18	27	27	27	**7**
TRUCK,M985,CARGO,W/MED CR (HEMTT)	T39586	194,853	140	128	128	128	**78**
TRANSPORTER,PALLETIZED LOAD SYSTEM (PLS)	T40999	243,746	853	853	853	853	**771**
TRANSPORTER,PALLETIZED LOAD SYS W/MHE (P	T41067	288,015	46	27	27	27	**0**
TRUCK, CARGO, 2.5 TON 4X4 (LMTV)	T41995	101,742	0	52	108	277	**2**
TRUCK, CARGO, 2.5 TON 4X4 (LMTV)	T42063	119,166	0	52	108	277	**2**
DIGITAL N/SECURE VOICE TELEPHONE TA-1035	T45408	2,459	2,630	2,846	3,035	3,035	**129**
TRAILER,FLATBED,11T,4-WHEEL (HEMAT)	T45465	34,714	95	89	89	89	**77**
TENT,MODULAR,MEDICAL,64X20	T47745	19,199	168	131	131	131	**500**
ROUGH TERRAIN CARGO HANDLER,50K LB (RTCH	T48941	159,138	102	71	71	71	**223**
TRUCK,FORK LIFT,6K LB,RT,VARIABLE REACH	T48944	72,370	245	281	283	283	**4**
TRUCK,FORK LIFT,6K LB	T49096	11,828	24	14	14	14	**0**
TRUCK,FORK LIFT,DD,10K LB,48 IN	T49119	75,923	397	281	282	282	**286**
TRUCK,FORK LIFT,DD,4K LB,RT	T49255	47,692	751	751	751	751	**481**
TEST SET,ELEC SYS,DS,DESETS	T52849	561,312	12	12	12	12	**0**
MOBILE SUBSCRIBER AN/VRC-97 (MSRT)	T55957	110,000	657	696	727	727	**339**
TERMINAL TACTICAL PETROLEUM MODERNIZATION	T56041	1,400,873	0	0	0	0	**12**
TRUCK,TANKER,FUEL,2500G WW (HEMTT)	T58161	246,567	58	155	155	155	**34**
TRUCK,TRACTOR,HEAVY EQUIP TRANS SYS (HET	T59048	256,704	437	437	437	437	**480**
TRUCK,CARGO,10 TON,W/LT CRANE (HEMTT)	T59278	185,820	89	147	152	152	**57**
TRUCK, CARGO, 2.5 TON 4X4 (LMTV)	T60081	104,626	160	52	108	277	**3,203**
TRUCK, CARGO, 2.5 TON 4X4 (LMTV)	T60149	115,639	5	52	108	277	**780**
TRUCK,YARD TRACTOR,5T	T60353	51,500	68	0	0	0	**138**
TRUCK,TRACTOR,M911 (HET)	T61035	75,416	8	31	31	31	**24**
TRUCK,TRACTOR,6X4 M915A2	T61103	78,589	1,928	1,928	1,928	1,928	**2,556**
TRUCK,TRACTOR,MED EQUIP TRANSPORTER,20T	T61171	74,288	723	723	723	723	**632**
TRUCK, TRACTOR, 5 TON, 6X6 W/E (MTV)	T61239	142,132	0	0	0	219	**3,254**
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	36,076	9,030	9,030	9,030	9,030	**12,846**
TRUCK,UTILITY,1-1/4 TON,M998,WW (HMMWV)	T61562	36,672	207	219	232	232	**137**
TRUCK, CARGO, 5 TON, 6X6 LWB (MTV)	T61704	118,791	0	0	0	257	**27**
TRUCK, CARGO, 5 TON, 6X6 W/E (MTV)	T61908	128,076	0	0	0	63	**2,628**
TEST FACILITY,ELEC OQ-290	T61973	1,400,000	0	0	0	0	**2**
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	276,866	346	346	346	346	**175**
TRUCK, DUMP, 5 TON, 6X6 W/E (MTV)	T64911	141,557	0	0	0	117	**773**

USAR

Table 1

Consolidated Major Item Inventory and Requirements

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
TUG,LARGE,COASTAL,128 FEET (LT 128)	T68330	20,000,000	4	4	4	4	**4**
TRUCK,LIFT,FORK,10K,VARIABLE REACH (ATLAS)	T73347	100,199	1	0	0	0	**362**
TRUCK,TANKER,FUEL,2500G (HEMTT)	T87243	237,210	243	243	243	243	**327**
TEST SET,RADIO AN/GRM-114	T87468	11,822	97	176	182	182	**180**
TRK, TRANSPORTER: COMMON BRIDGE 8X8 (CBT)	T91308	100,000	342	342	342	342	**342**
TRUCK,TRACTOR,LET M916A1	T91656	138,870	208	546	546	546	**68**
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV	T92242	64,281	1,587	1,509	1,512	1,512	**1,184**
TRUCK, VAN, 2.5 TON, 4X4 W/E (LMTV)	T93484	162,060	0	0	0	23	**349**
TRAILER,PALLETIZED LOAD SYSTEM (PLS)	T93761	41,910	741	741	741	741	**771**
TRUCK, WRECKER, 5 TON, 6X6 W/E (MTV)	T94709	268,992	0	0	0	29	**305**
SPREADER,LIFT,FRT,CONT	U12203	4,880	123	89	89	89	**117**
LOGISTICS SUPPORT VESSEL (LSV)	V00426	30,164,000	1	1	1	1	**1**
TANK ASSEMBLY,FABRIC,10K GAL,POL	V12552	6,990	1,133	1,036	1,038	1,038	**1,554**
TANK,FABRIC,COLLAPSIBLE,WATER,3K GAL	V15018	1,762	87	94	94	94	**110**
TANK,LIQUID DISPENSING,TRAILER MOUNTED	V19950	1,825	602	490	496	496	**958**
WATER STORAGE/DISTRIBUTION SET	W37311	200,508	6	6	6	6	**22**
REVERSE OSMOSIS WATER PURIF UNIT,3OOO GP	W47225	748,000	80	66	71	71	**147**
WELDER SHOP,TRAILOR MOUNTED	W48391	43,250	78	86	87	87	**142**
TRACTOR,FULL TRACKED,LOW SPEED	W76816	172,896	332	307	307	307	**281**
TRACTOR,FT,LS,DED,MED	W83529	106,190	274	303	303	303	**276**
TRACTOR,FULL TRACKED,W/BULDOZER	W88699	197,322	29	44	44	44	**24**
TRAILER,BOLSTER GROUP,4T M796	W94536	9,618	411	498	498	498	**252**
TRAILER,CARGO,3/4T M101A1	W95537	3,894	2,197	2,250	2,271	2,271	**188**
TRANSPORTER,BRIDGE,FLOATING	X23277	102,218	24	117	117	117	**0**
TRUCK,FORK LIFT,ELECTRIC,4K LB,144 IN	X50436	28,098	70	0	0	0	**36**
TRUCK,TANK,FUEL M49A2C	X57271	98,162	5	5	5	5	**2**
VIEWER,INFRARED AN/PAS-7	Y03104	16,779	11	9	9	9	**11**
WELDING SHOP,TRAILER MOUNTED	Y48323	9,603	12	24	24	24	**19**

USAR
Average Age of Equipment

NOTE: This table provides the average age of selected major items of equipment. Since equipment is normally procured over several years, the average age provides a projected average age of the fleet for budget year (BY) 2001.

NOMENCLATURE	*EQUIP No.*	*AVERAGE AGE*	*REMARKS*
CRANE, WHEEL MOUNTED, 7 1/2 T	C36151	10	
CRANE, WHEEL MOUNTED, ROUGH TERRAIN	C39398	10	
DISTRIBUTOR, WATER TANK, 6000 GAL, TRLR MTD	D28318	14	
CRANE-SHOVEL, CRAWLER MOUNTED	F40474	40	
ALL TERRAIN CRANE, 25T (ATEC)	C36586	3	
FLOODLIGHT SET TRAILER MOUNTED	F79334	19	
GENERATOR PWR, 15KW,60HZ,TRLR MTD	G53778	5	
GENERATOR, SMOKE, MECH PULSE	J30492	29	
GENERATOR SET,DIESEL ENGINE,30KW	J36383	17	
INST REP SHOP M185A3	K90188	33	
LAUNDRY UNIT, TRAILER MOUNTED	L48315	31	
LOADER, SCOOP,5CY	L76321	22	
LOADER, SCOOP,4.5CY	L76556	15	
ASPHALT	M57048	4	
RAMP LOADING VEHICLE, 16K LB	R11154	13	
RECOVERY VEHICLE, MDM M88A1	R50681	27	
SEMITRAILER, TANK, 5K GAL M967	S10059	13	
ROLLER, TOWED, VIBRATING, 5T	S10682	14	
ROLLER PNEUMATIC, VAR PRESSURE	S11793	22	
ROLLER, VIBRATORY, SP, HIGH IMPACT	S12916	21	
SCRAPER, EARTH MOVING	S56246	14	
SEMITRAILER, 22 1/2T M871	S70027	13	
STLR LB HVY EQUIP 60T	S70661	25	
SEMITRAILER, FUEL SVC, 5K GAL	S72983	32	
SEMITRAILER TANK PETRO	S73119	9	
SEMITRAILER, VAN, CGO M128A2C	S74079	32	
SEMITRAILER, VAN, RPR STOR,6T	S74832	28	
SEMITRAILER, VAN SUP M129A2C	S75175	24	
TRK UTIL TACT 3/4T W/E	T05028	15	
TRK UTIL TOW CARR ARMD	T05096	13	
TRK UTIL SHLTR CARR WE	T07543	10	
TRUCK UTILITY HMMWV	T07679	6	
TRK AMB 2 LITTER ARMD	T38707	12	
TRK AMB 4 LITTER ARMD	T38844	11	
TRK CGO TACT W/W-LT CR	T39518	13	
TRK CGO TACT W/MED CRN	T39586	11	
TRK CGO HVY XPORTER	T40999	5	
TRK CGO HVY W/MHE W/E	T41067	7	
TRAILER, FLATBED,11T,4 WH (HEMAT)	T45465	6	
ROUGH TERRAIN CARGO HANDLER (RTCH) 50K LB	T48941	16	
TRUCK, FORK LIFT, 6K LB,RT,VAR REACH	T48944	9	
TRUCK, FORK LIFT, 6K LB	T49096	11	
TRUCK, FORK LIFT,DSL DRVN,10K LB,48 IN	T49119	17	
TRUCK, FORK LIFT,DSL DRVN,4K LB,RT	T49225	5	
TRK TANK FUEL 2500G WW	T58161	9	
TRUCK TRACTOR (HET)	T59048	6	

USAR
Average Age of Equipment

NOMENCLATURE	*EQUIP No.*	*AVERAGE AGE*	*REMARKS*
TRK CGO TACT W/LT CRANE HEMTT M977	T59278	11	
TRK CGO TACT 1 1/4T CUCV	T59346	15	
TRK CGO 1 1/4T M1028 CUCV	T59414	14	
TRK CGO 1 1/4T M1008 CUCV	T59482	14	
TRK TRAC 5T YARD 4X2	T60353	19	
TRK TCTR HET M911	T61035	10	
TRK TRAC 6X4 M915	T61103	16	
TRK TRAC MET 8X6 75000	T61171	20	
TRK UTIL 1 1/4 4X4 WE M998 CGO/TROOP CARRIER	T61494	9	
TRK UTIL 1 1/4 4X4 WW M1038 CGO/TRP CARRIER	T61562	11	
TRK WKR TACT 8X8 HVY EXP MOB TACT TRUCK	T63093	9	
TRK TANK FUEL 2500G	T87243	10	
TRK TRAC 66000 M916	T91656	18	
TRK UTIL 1 1/4T M1025 HMMWV ARMAMENT CARR	T92242	10	
TRK UTIL 1 1/4T M1026 HMMWV ARMNT CARR W/W	T92310	10	
TRUCK VAN LMTV W/E	T93484	2	
TRLR PALLET LOAD 8X20	T93761	5	
TRUCK WRECKER MTV W/E	T94709	2	
TRK BOLSTER 5T 6X6 WWN	X39187	29	
TRK CGO 2 1/2T 6X6 W/E	X40009	30	
TRK CGO 2-1/2T M35A2C	X40077	27	
TRK CGO 2 1/2T 6X6 WWN	X40146	31	
TRK CGO M35A2C WW	X40214	26	
TRK CGO 2-1/2T M36A2	X40283	25	
TRK CGO M36A2 WW	X40420	30	
TRK CGO DROP SIDE 5T	X40794	12	
TRK CGO 5T 6X6 LWB W/E	X40831	29	
TRK CGO DROP SIDE WWN	X40931	13	
TRK CGO 5T 6X6 LWB WWN	X40968	31	
TRK CGO 5T 6X6 XLWB WE	X41105	18	
TRK CGO 5T 6X6 XLWB WN	X41242	33	
TRK DUMP 5T 6X6 W/E	X43708	18	
TRK DUMP 5T 6X6 WWN WE	X43845	28	
TRK DUMP 20T DD 12 CY	X44403	23	
TRK TANK FUEL M49A2C	X57271	28	
TRK WATER 1000G M50A3	X58367	30	
TRUCK TRACTOR 2-1/2 T	X59052	32	
TRK TRAC 5T 6X6 W/E	X59326	20	
TRK TRAC 5T 6X6 WWN WE	X59463	26	
TRK TRAC WKR 5T WWN WE	X60696	29	
TRK UTIL 1/4T 4X4 W/E	X60833	27	
TRK VAN EXP 5T 6X6	X62237	15	
TRK VAN SHOP 2 1/2T WE	X62340	31	
TRK VAN SHOP M109A3 WW	X62477	15	
TRK DUMP 20T	X63299	22	

USAR
Service Planned Procurments (P-1R Data)

NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurment funds as identified in the P-1R exhibit of the President's budget. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 2001*	*FY 2002*	*FY 2003*	*REMARKS*
UTILITY F/W (MR) AIRCRAFT		7,200,000	14,300,000	
UTILITY/CARGO AIRPLANE MODS	1,600,000	3,000,000	3,000,000	
JAVELIN (AAWS-M) SYSTEM SUMMARY		12,500,000		
ARMORED VEH LAUNCH BRIDGE (AVLB) (MOD)	1,700,000			
ARMOR MACHINE GUN, 7.62MM M240 SERIES			1,400,000	
GRENADE LAUNCHER, AUTO, 40MM, MK19-3	4,600,000	3,800,000	2,400,000	
M16 RIFLE	1,000,000	400,000	600,000	
SEMITRAILER, TANK, 7500G, BULKHAUL	16,000,000			
HI MOB MULTI-PURP WHLD VEH (HMMWV)	5,300,000	15,200,000		
FAMILY OF MEDIUM TACTICAL VEHICLES (FMTV)	33,800,000	35,100,000	343,700,000	
FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIP		1,100,000	11,700,000	
FAMILY OF HEAVY TACTICAL VEHICLES (FHTV)	6,200,000		120,800,000	
TRUCK, TRACTOR, LINE HAUL, M915/M916	3,400,000			
TRUCK, TRACTOR, YARD TYPE, M878 (C/S)			2,000,000	
HVY EXPANDED MOBILE TACTICAL TRUCK ESP			48,100,000	
LINE HAUL ESP			27,300,000	
TSEC - ARMY KEY MGT SYS (AKMS)	300,000	500,000	700,000	
DIGITAL TOPOGRAPHIC SPT SYS (DTSS) (TIARA)			1,100,000	
DIGITIZATION APPLIQUE		800,000	10,100,000	
TOPO SUPPORT SYSTEM (TSS)		1,200,000	600,000	
LOGTECH	800,000	800,000	800,000	
ISYSCON EQUIPMENT			5,400,000	
MANEUVER CONTROL SYSTEM (MCS)			17,500,000	
STAMIS TACTICAL COMPUTERS (STACOMP)	7,500,000	8,600,000	9,200,000	
AUTOMATED DATA PROCESSING EQUIP	2,400,000	2,300,000	2,900,000	
RESERVE COMPONENT AUTOMATION SYS (RCAS)	34,500,000	33,600,000	7,100,000	
GEN SMK MECH:MTRZD DUAL PURP M56		17,700,000	11,700,000	
GENERATOR, SMOKE, MECH M58		7,100,000	5,900,000	
WIDE AREA MUNITIONS (REMOTE CONTROL UNIT)			300,000	
LAUNDRIES, SHOWERS AND LATRINES	4,700,000	13,200,000	11,500,000	
FLOODLIGHT SET, ELEC, TRL MTD, 3 LIGHTS		400,000		
QUALITY SURVEILLANCE EQUIPMENT	200,000			
DISTRIBUTION SYSTEMS, PETROLEUM & WATER	3,300,000	2,200,000		
WATER PURIFICATION SYSTEMS	3,700,000	3,700,000		
COMBAT SUPPORT MEDICAL	8,000,000	1,000,000	1,200,000	
GRADER, ROAD MTZD, HVY, 6X4 (CCE)			900,000	
LOADERS		2,100,000	5,100,000	
HYDRAULIC EXCAVATOR	2,600,000			
DEPLOYABLE UNIVERSAL COMBAT EARTH MOVERS	11,800,000			
CRANES	2,500,000	1,900,000	2,600,000	
CRUSHING/SCREENING PLANT, 150 TPH		5,700,000	3,800,000	
LOGISTIC SUPPORT VESSEL (LSV)			29,000,000	
LOGISTICS SUPPORT VESSEL (ESP)	6,100,000			
GENERATORS AND ASSOCIATED EQUIP	2,300,000			
ROUGH TERRAIN CONTAINER HANDLER, 53,000 LBS.		18,100,000	18,800,000	
ALL TERRAIN LIFTING ARMY SYSTEM	7,300,000		24,500,000	
TEST EQUIPMENT MODERNIZATION (TEMOD)	2,600,000	1,100,000	1,200,000	
TOTAL PROCUREMENTS FOR THE USAR	**174,200,000**	**200,300,000**	**747,200,000**	

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 1998*	*FY 1999*	*FY 2000*	*REMARKS*
CH-47, CARGO, HELICOPTER	22,300,000			
COMMON BRIDGE TRANSPORTER (CBT)	5,565,000	3,800,000	2,800,000	
M915, TRK, LINE HAUL ESP	4,178,500	4,800,000		
HMMWV CONTACT MNT TRK	4,465,482	5,600,000		
TRACTOR, YARD	2,010,000			
HYDRAULIC EXCAVATOR	1,090,000			
ALL-TERRAIN FORKLIFT 10K	6,673,040			
SMALL ARMS SIMULATORS	2,009,113			
SOLDIERS ENHANCED PROGRAM				
NIGHT VISION PVS-7	398,482	5,800,000		
M917A1, DUMP TRUCK				
AUT SAND BAGGER+ADPTR	117,000			
2 1/2 TON SHOP VAN ESP	2,439,600			
MODERN BURNER UNIT + GENERATOR	1,900,000		975,000	
M871 SEMI-TRAILER, 22.5T	3,082,644			
TRUCK TRACTOR M915A3	3,645,000			
FAMILY OF MEDIUM TACT VEH	13,556,340		2,700,000	
HMMWV M1097			6,120,000	
RT CONTAINER HANDLER 53K			16,800,000	
PLS TRAILER M1076			450,000	
WATER EQUIPMENT	110,000			
TOTAL	**73,540,201**	**20,000,000**	**29,845,000**	

USAR
Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

NOMENCLATURE	*EQUIP No.*	*FY 2001 QTY*	*FY 2002 QTY*	*FY 2003 QTY*	*REMARKS*
ALARM,CHEMICAL AGENT,AUTOMATIC,M8A1	A32355	59	56	31	
DECONTAMINATING APPARATUS,LIGHT WEIGHT M17	D82404	16	2	10	
ELECTRONIC KEYING DEVICE KYK-13/TSEC	E98103	15	14	11	
DETECTING SET,MINE AN/PSS-12	G02341	40	24	17	
RADIO SET,HF AN/GRC-193A	H35404	8	7	15	
LIGHTWEIGHT DIGITAL FACSIMILE AN/UXC-7	L67964	48	3	10	
MACHINE GUN,5.56MM M249 (SAW)	M09009	345	37	16	
MASK,CHEMICAL BIOLOGICAL M40	M12418	1300	715	572	
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526	644	9	5	
MEDICAL EQUIPMENT SET SICK CALL FIELD (2)	M30156	8	8	2	
MEDICAL EQUIPMENT SET TRAUMA FIELD (2)	M30499	8	10	2	
MINI EYESAFE LASER INFRARED OBS SET AN/PVS-6	M74849	9	50	51	
NET CONTROL DEVICE,KYX-15/TSEC	N02758	12	3	3	
NIGHT VISION SIGHT AN/PVS-4	N04732	27	49	10	
NIGHT VISION GOGGLES AN/PVS-7B	N05482	747	689	561	
NIGHT VISION SIGHT AN/TAS-5	N23721	14	13	18	
POWER SUPPLY PP-6224/U	P40750	24	9	4	
RADIACMETER IM-93/UD	Q20935	173	209	126	
RADIAC SET AN/PDR-75	R30925	18	21	2	
RADIO SET AN/VRC-89A (SINCGARS)	R44863	45	13	15	
RADIO SET AN/VRC-92A (SINCGARS)	R45407	23	61	55	
RADIO SET AN/VRC-87A (SINCGARS)	R67160	60	7	2	
RADIO SET AN/VRC-88A (SINCGARS)	R67194	13	10	129	
RADIO SET AN/VRC-90A (SINCGARS)	R67908	412	68	156	
RADIO SET AN/VRC-91A (SINCGARS)	R68010	32	43	29	
RADIO SET AN/VRC-119A (SINCGARS)	R83005	12	17	17	
RIFLE,5.56 MM M16A2	R95035	1200	675	694	
SANITATION CENTER,FOOD	S33399	29	81	57	
MOBILE SUBSCRIBER AN/VRC-97 (MSRT)	T55957	40	28	31	
TRUCK,UTILITY,1-1/4 TON,M998,WE (HMMWV)	T61494	253	120	121	
TRUCK,WRECKER,M948E1,8X8 (HEMTT)	T63093	3	4	4	
TRUCK,UTILITY,1-1/4 TON,M1025,ARM (HMMWV)	T92242	3	28	3	
TANK,LIQUID DISPENSING,TRAILER MOUNTED	V19950	4	3	6	
WELDER SHOP,TRAILOR MOUNTED	W48391	4	2	1	
TRAILER,CARGO,3/4T M101A1	W95537	4	21	21	
TRUCK,CARGO,5T,DROP SIDE M923	X40794	2	4	4	

USAR
FY 1999 Planned vs Actual Procurements and Transfers

This table compares what the Services planned to procure and transfer to the RC in FY 1999 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered in FY 1999.

Nomenclature	Equip No.	FY 99 Transfers		FY 99 Procurements		FY 99 NGREA	
		Planned	Actual	Planned	Actual	Planned	Actual
AIRPLANE,CARGO,C-12R	A30062	6	0				
ANESTHESIA APPARATUS,GAS	A62773	28	0				
BATH UNIT,PORTABLE,8-SHOWER	B43663	3	0	0	6		
BED,CARGO,DEMOUNTABLE FLATRACK (PLS)	B83002			192	0		
CRANE, ALL TERRAIN (ATEC)	C36586			0	62		
CRANE,WHEEL MOUNTED,ROUGH TERRAIN	C39398	19	0				
SIMPLE COLLECTION PROTECTION EQUIPMENT M-20	C79000	17	0				
DETECTOR SET,RADAR AN/APR-39A	D03159	73	0				
DRUM,FABRIC,COLLAPSIBLE,WATER,500 GAL	D69050	84	0				
DATA PROCESS SYSTEM AN/MYQ-4	D78075	3	0				
DEFIBRILLATOR MONITOR	D86072	127	0				
ELECTRONIC KEY GEN DEVICE TSEC/KG-81	E03123	36	0				
CRANE,WHEEL MOUNTED,20T	F39378	7	0				
FORWARD AREA WATER POINT SUPPLY SYSTEM	F42612	28	0				
CRANE,TRK MTD HYD,25T	F43429	1	0				
FLOODLIGHT SET TRAILER MOUNTED	F79334	5	0				
GENERATOR,5KW,60HZ,SKID MTD (TQG)	G11966	24	0				
GENERATOR,60KW,50/60HZ,SKID MTD (TQG)	G12034	17	0	12	0		
GENERATOR PWR UNIT,30KW,60HZ,TRLR MTD (TQG)	G35851	10	0				
GENERATOR PWR UNIT,10KW,60HZ,TRLR MTD (TQG)	G42170	1	0				
GENERATOR PWR UNIT,15KW,60HZ,TRLR MTD (TQG)	G53778	34	0				
GENERATOR,30KW,50/60HZ,SKID MTD (TQG)	G74575	26	0				
GENERATOR,10KW,60HZ,SKID MTD (TQG)	G74711	58	0	4	0		
FILTER SEPARATOR,LIQUID,350 GPM	H52087	36	0				
FORWARD AREA REFUELING EQUIPMENT	H94824	9	0				
FUEL SYSTEM SUPPLY POINT,60K GAL	J04717	1	0				
GENERATOR SET,DIESEL ENGINE,10KW	J35825	43	45				
HYPOCHLORINATION UNIT	K60988	7	0				
LAUNDRY UNIT,TRAILER MOUNTED	L48315	4	0				
MEDICAL MATERIEL SET,CENT MATERIEL (DEPMEDS)	M08417	6	0				
MEDICAL MATERIEL SET,INT CARE (DEPMEDS)	M08599	8	0				
MEDICAL MATERIEL SET,POST-OP/ICU (DEPMEDS)	M09576	11	0				
MASK,CHEMICAL BIOLOGICAL M40	M12418			2,073	0		
MASK,PROTECTIVE,COMBAT VEHICLE M42	M18526			158	0		
MEDICAL EQUIPMENT SET SICK CALL FIELD (2)	M30156	10	0				
MEDICAL EQUIPMENT SET TRAUMA FIELD (2)	M30499	10	0				
MEDICAL MATERIEL SET,X-RAY (DEPMEDS)	M72300	1	0				
MEDICAL MATERIEL SET,OP ROOM (DEPMEDS)	M72936	4	0				
MINI EYESAFE LASER INFRARED OBS SET AN/PVS-6	M74849	35	0				
MEDICAL MATERIEL SET,X-RAY (DEPMEDS)	M86675	1	0				
NIGHT VISION GOGGLES AN/PVS-7B	N05482			1,346	0	2,000	2,000
OPERATING AND TREATMENT OUTFIT,DENTAL,FIELD	P19377	1	0				
GENERATOR PWR PLANT,5KW,60HZ,TRLR MTD (TQG)	P28083	13	0				
POWER SUPPLY PP-6224/U	P40750	8	0				
GENERATOR PWR PLANT,30KW,60HZ,TRLR MTD (TQG	P42126	12	0	0	29		

USAR
FY 1999 Planned vs Actual Procurements and Transfers

Nomenclature	*Equip No.*	*FY 99 Transfers*		*FY 99 Procurements*		*FY 99 NGREA*	
		Planned	*Actual*	*Planned*	*Actual*	*Planned*	*Actual*
GENERATOR PWR PLANT,60KW,60HZ,TRLR MTD (TQG	P42194	3	15				
GENERATOR PWR PLANT,10KW,60HZ,TRLR MTD (TQG	P42262	3	0				
PUMP ASSEMBLY,ENG DRVN,FLAM LIQ,350 GPM W/RE	P97119	3	0				
PROCESSING MACHINE,RAD FILM	P98514	4	0				
RADIO SET AN/VRC-89A (SINCGARS)	R44863	225	118				
RADIO SET AN/VRC-92A (SINCGARS)	R45407	225	36				
RADIO SET AN/VRC-87A (SINCGARS)	R67160	202	87				
RADIO SET AN/VRC-88A (SINCGARS)	R67194	247	208				
RADIO SET AN/VRC-90A (SINCGARS)	R67908	652	623				
RADIO SET AN/VRC-91A (SINCGARS)	R68010	270	111				
RADIO SET AN/VRC-119A (SINCGARS)	R83005	360	220				
SPECTRUM ANALYZER AN/USM-489(V)1	S01416	9	0				
ROLLER,TOWED,VIBRATING,5TON	S10682	2	0				
ROLLER,VIBRATORY,SELF PROPELLED,HIGH IMPACT	S12916			40	0		
SEMITRAILER,VAN,RPR STOR,6T	S74832	2	0				
TESTING KIT PETROLEUM MODERNIZATION SYSTEM	T05741	27	0				
TRUCK,UTILITY,SHELTER CARRIER (HMMWV)	T07543	600	0				
TRUCK,UTILITY,HEAVY VARIANT (HMMWV)	T07679	0	40	120	0		
TANK ASSY,FABRIC,COLLAPSIBLE,20K GAL,POL	T12620	2	0	16	0		
TANK ASSY,FABRIC,COLLAPSIBLE,WATER,3K GAL	T19033	35	0				
SHOP EQUIPMENT,AUTOMOTIVE MAINT	T24660	1	0				
SHOP EQUIPMENT,AUTOMOTIVE MAINT	T25619	1	0				
SHOP EQUIPMENT,AUTOMOTIVE MAINT	T25756	1	0				
SMALL EMPLACEMENT EXCAVATOR W/FRONT LOADI	T34437	16	0				
TENT,MODULAR,MEDICAL,64X20	T47745	57	0				
M915A4 TRUCK TRACTOR GLIDER KIT (UPGRADE	T61103					69	68
TRUCK,TRACTOR,MED EQUIP TRANSPORTER,20T	T61171	8	0				
TEST FACILITY,ELEC OQ-290	T61973	3	0				
TRUCK, LIFT, FORK, 10K,VARIABLE REACH (ATLAS)	T73347			0	14		
SPREADER,LIFT,FRT,CONT	U12203	10	0				
TANK ASSEMBLY,FABRIC,10K GAL,POL	V12552	16	0				
REVERSE OSMOSIS WATER PURIF UNIT, 3000 GPH	W47225			0	13		
TRACTOR,FT,LS,DED,MED	W83529	2	0				
TRUCK,CARGO,5T,DROP SIDE WW	X40931	1	0				
TRUCK,TANK,FUEL M49A2C	X57271	1	0				
TRUCK,WRECKER,M936,5T,6X6 W/W W/E	X63299	1	0				
HMMWV CONTACT MAINTENANCE TRUCK (CMT) SHE	Z65205					85	81
HEMTT COMMON BRIDGE TRANSPORTER (CBT) KIT	Z92572					31	27

USAR
Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.

Required Item Nomenclature	*Required Item Equip No.*	*Substitute Item Nomenclature*	*Substitute Item Equip No.*	*FY 2001 QTY*	*Deployable Yes*	*No*
GEN SET DED SKID MTD	G11966	GENR SET DSL ENG 002A	J35813	546	X	
GEN SET DED SKID MTD	G12034	GENR SET DSL ENG 60KW	J38301	53	X	
GEN SET DED SKID MTD	G12170	GENR SET DSL ENG 15KW	J35835	55	X	
GEN SET DED TM PU-803	G35851	GENR SET DSL ENG 30KW	J36383	44	X	
GEN SET DED TM PU-798	G42170	GEN ST DSL ENG TM	G40744	18	X	
GEN SET DIESEL ENG TM	G53778	GENR SET DSL ENG PU405	J35492	90	X	
GEN SET DED SKID MTD	G74575	GENR SET DSL ENG 30KW	J36109	30	X	
GEN SET DED SKID MTD	G74711	GENR SET DSL ENG 10KW	J35825	176	X	
GEN SET DIESEL TRL/MTD	G78306	GENR SET DSL ENG PU650	J35629	57	X	
ELCT SHOP AN/ASM-146LP	H01907	ELCT SHOP AN/ASM-189LP	H01855	3	X	
ELCT SHOP AN/ASM-146LP	H01907	ELCT SHOP AN/ASM-147LP	H01912	10	X	
HF RDD SET AN/GRC-193A	H35404	RDO ST AN/GRC-106	Q32756	93	X	
GENR SET DSL ENG 200KW	J40150	GENR SET DSL ENG 200KW	J40158	4	X	
MELIOS LASER AN/PVS-6	M74849	LASER INFRARED AN/GVS5	L40063	6	X	
NIGHT VIS GOG AN/PVS7B	N05482	NI VIS GOG AN/PVS-5	N04456	833	X	
PWR PLNT ELEC DED TM	P28083	GENR SET GAS ENG PU620	J47617	2	X	
PWR PLNT ELEC DED TM	P28151	PW PLANT ELEC TM	P41832	4	X	
PWR SUP PP-6224/U	P40750	PWR SUP PP-2953/U	P38588	145	X	
PWR PLANT ELEC TR/MTD	P42126	PWR PLANT AN/MJQ-10	P27819	30	X	
PWR PLANT ELEC T/MTD	P42194	PWR PLANT AN/MJQ-12	P27823	7	X	
POWER PLANT DIESEL	P42262	PW PLANT ELEC DED TM	P28015	39	X	
RDO SET AN/GRC-213	R30895	RDO ST AN/GRC-106	Q32756	37	X	
RADIO SET AN/VRC-89A	R44863	RDO ST AN/VRC-47	Q54174	178	X	
RADIO SET AN/VRC-89A	R44863	RDO SET AN/VRC-89	R44795	3	X	
RDO SET AN/VRC-90	R45203	RDO ST AN/VRC-46	Q53001	3	X	
RDO SET AN/VRC-90	R45203	RDO ST AN/VRC-47	Q54174	1	X	
RADIO SET AN/VRC-92A	R45407	RDO ST AN/VRC-49	Q55114	34	X	
RADIO SET AN/VRC-92A	R45407	RDO SET AN/VRC-92	R45339	1	X	
RDO SET AN/PRC-104A	R55200	RDO ST AN/PRC-74	Q38296	116	X	
RDO SET AN/PRC-104A	R55200	RADIO SET AN/PRC-70	R38349	3	X	
RDO SET AN/PRC 119	R55268	RDO ST AN/PRC-77	Q38299	4	X	
RADIO SET AN/VRC-87A	R67160	RDO ST AN/VRC-64	Q56783	33	X	
RADIO SET AN/VRC-88A	R67194	RDO ST AN/GRC-160	Q34308	316	X	
RADIO SET AN/VRC-90A	R67908	RDO ST AN/VRC-46	Q53001	802	X	
RADIO SET AN/VRC-90A	R67908	RDO SET AN/VRC-90	R45203	18	X	
RADIO SET AN/VRC-91A	R68010	RDO SET AN/VRC-91	R45271	33	X	
STLR TK 5000 G M967	S10059	STLR TNK 5000G M969	S73372	3	X	
STLR LB 22 1/2T M871	S70027	STLR LOW BED M172A1	S70517	47	X	
STLR LB 22 1/2T M871	S70027	SEMITRAILER STAKE: 12	S72024	32	X	
STLR TNK 5000G M969	S73372	STLR FUEL 5000G 12T 4W	S72846	5	X	
STLR TNK 5000G M969	S73372	STLR FUEL SVC 5000G	S72983	9	X	
TRAC WHLD DSL 4X4 EXCA	T34437	TRACTOR WHL IND (CCE)	W91074	4	X	

USAR
Major Item of Equipment Substitution List

Required Item Nomenclature	*Required Item Equip No.*	*Substitute Item Nomenclature*	*Substitute Item Equip No.*	*FY 2001 QTY*	*Deployable Yes*	*No*
TRK CGO TACT W/MED CRN	T39586	TRK CGO TACT W/W-LT CR	T39518	25	X	
TRK CGO TACT W/MED CRN	T39586	TRK CGO TACT W/W-M-CRN	T39654	2	X	
TRK CGO TACT W/MED CRN	T39586	TRK CGO TACT W/LT CRAN	T59278	41	X	
TRK LF DED 50000LB R T	T48941	CRANE WHL MTD HYD RT	C39398	2	X	
TRK LF DD 10000LB 48IN	T49119	TRK LF DED 1000 LB	X49051	7	X	
TRK LF DD 4000 LB R T	T49255	TRK LF 6000LB RT AMMO	T48944	44	X	
TRK LF DD 4000 LB R T	T49255	TRK LF DD 10000LB 48IN	T49119	3	X	
TRK LF DD 4000 LB R T	T49255	TRK LF DED 6000 LB	X48914	43	X	
TRK LF DD 4000 LB R T	T49255	TRK LF DED 1000 LB	X49051	2	X	
TRK TRAC MET 8X6 75000	T61171	TRK TRAC 66000 M916	T91656	330	X	
TRK UTIL 1 1/4 4X4 WE	T61494	TRK UTIL TACT 3/4T W/E	T05028	521	X	
TRK UTIL 1 1/4 4X4 WE	T61494	TRK CGO TACT 1 1/4T	T59346	148	X	
TRK UTIL 1 1/4 4X4 WE	T61494	TRK UTIL 1 1/4 4X4 WW	T61562	146	X	
TRK TANK FUEL 2500G	T87243	TRK TANK FUEL 2500G WW	T58161	97	X	
TRK UTIL ARMT 1 1/4T	T92242	TRK UTIL TOW CARR ARMD	T05096	201	X	
WLD SHOP TRLR MTD	W48391	SHOP EQ WELDING	T16714	6	X	
WLD SHOP TRLR MTD	W48391	WELD MACH ARC 300	Y46234	4	X	
WLD SHOP TRLR MTD	W48391	WELD SHOP TLR MTD 300	Y48255	5	X	
WLD SHOP TRLR MTD	W48391	WELD SHOP TLR MTD	Y48323	12	X	
TRACTOR FT LS DED MED	W76816	TRACTOR FT LS DED MED	W83529	23	X	
TRACTOR FT LS DED MED	W83529	TRACTOR FT LS DED MED	W76816	5	X	
TRACTOR FT LS DED MED	W83529	TRACTOR FT W/BULDOZ	W88699	7	X	
TRK LF ELEC 4000LB 144	X50436	TRK LF ELEC 4000LB 180	X50489	56	X	
WELD SHOP TLR MTD	Y48323	WLD SHOP TRLR MTD	W48391	6	X	
WELD SHOP TLR MTD	Y48323	WELD SHOP TLR MTD 300	Y48255	1	X	

Chapter 3
United States Marine Corps Reserve

I. Marine Corps Overview

a) Overall Marine Corps–wide Planning Guidance: The Marine Corps Reserve remains an essential part of Naval Expeditionary Forces. As a force in readiness, the Active component has primary responsibility for forward presence, winning first battles, operations other than war, and response to crises. The Marine Reserve Force supports these missions as required, but more importantly, augments and reinforces the Active component, creating a Total Force capable of sustained combat in the event of a major theater war. Marine Reservists share the same commitment to expeditionary readiness as their active duty counterparts and meet common training, equipment, and readiness criteria. Marine Corps Reserve units routinely exercise with the Active forces and are assigned missions that lead to relevant combat responsibilities. They must remain prepared and properly equipped to fight along side the regular force when needed.

b) Marine Corps-wide Equipping Policy: The Marine Corps, as the world's premier crisis response expeditionary force-in-readiness, is well positioned for the 21st Century. Fighting smartly is reflected in the Marine Corps commitment to getting the most out of every resource dollar. Crucial to this is the Combat Development Process (CDP). The CDP is an integrated process that is based on operational and functional concepts of formulating warfighting requirements, implementing efficient and effective programs, and establishing operational capabilities in support of Marine Air-Ground Task Forces (MAGTF). The CDP includes the continuous examination and evaluation of Marine Corps combat capabilities and concepts to identify deficiencies and develop new concepts and required capabilities.

The process is used to develop doctrinal, organizational, training and education, and facilities and support requirements into a single integrated "cradle to grave" process. From the CDP, the Marine Corps develops a single Approved Acquisition Objective (AAO). The AAO includes equipment modernization plans and addresses all initial issue quantities and planned sustainability requirements for Active and Reserve units. There are two types of appropriations the Reserves utilize for procurement of ground and aviation equipment/aircraft. The primary source is Procurement Marine Corps funds (the Reserve portion is identified in the P-1R budget exhibit). The second source is National Guard and Reserve Equipment Appropriation (NGREA). Because NGREA is a congressional add, it is not used in the budgeting process. The Marine Corps Reserve uses a combination of procurement funds and NGREA funds to attain the AAO. The Navy coordinates aircraft procurements for both the Active and Reserve components of both the Navy and Marine Corps.

The Marine Corps uses both vertical and horizontal equipment fielding to equip the Total Force. In vertical fielding, equipment is fielded to one unit at a time. This enables a unit to obtain operational capability at the earliest possible time. In contrast, horizontal fielding provides equipment to multiple units simultaneously. Reserve ground and aviation units are provided with almost the identical type of equipment fielded to the Active component; although, there are some very minor differences. This

approach ensures Active and Reserve units are obtaining equipment concurrently. Further, this methodology is in line with the guidance from the Secretary of the Navy, which states Reserve systems and equipment should be interoperable with the Active Forces to the degree that resources allow.

c) Marine Corps Plan to Fill Mobilization Shortages in the RC: The total wartime equipment requirement for Marine Forces Reserve (MARFORRES) units is called the Table of Organization and Equipment (T/O&E). For Reserve units this T/O&E consists of two parts, a Training Allowance (T/A) and In-stores assets. The equipment MARFORRES units maintain at their training sites is called the T/A. The T/A generally constitutes about 88 percent of the T/O&E requirement and is largely determined by space limitations at the unit training sites and staffing levels. The balance of the RC equipment requirements is referred to as the In-stores assets, which are held at the two Marine Corps Logistics Bases (MARCORLOGBASES).

Due to past funding constraints and shortfalls for Depot Maintenance, the operational availability of the In-stores assets is relatively low. However upon mobilization, it is planned that MARFORRES ground equipment shortfalls will be augmented by equipment left behind by units deploying to locations with pre-positioned assets. This equipment is referred to as Remain Behind Equipment (RBE). MARFORRES units may also benefit from falling in on pre-positioned assets contingent on what Operational Plan is being executed. Hence, when MARFORRES units mobilize and integrate into the gaining MAGTF commander's Total Force, equipment shortfalls may be offset by RBE and pre-positioned equipment.

F/A-18 Fighter Aircraft

d) Current Marine Corps Initiatives Affecting RC Equipment: The Marine Corps Reserve's role upon mobilization requires that the Reserve component forces possess and train on the same modern equipment as the Active component. This modern equipment is provided through the Procurement Marine Corps (PMC) funding for both Active and Reserve components. The NGREA is used to enhance Reserve component readiness by purchasing equipment to fill valid requirements or to accelerate the fielding of a piece of equipment.

In his Commandant's Guidance, General Jones stated his intent to resource the Reserve at levels similar to the Active component. This commitment to the Reserve is indicative of the Marine Corps' Total Force approach to modernization and readiness.

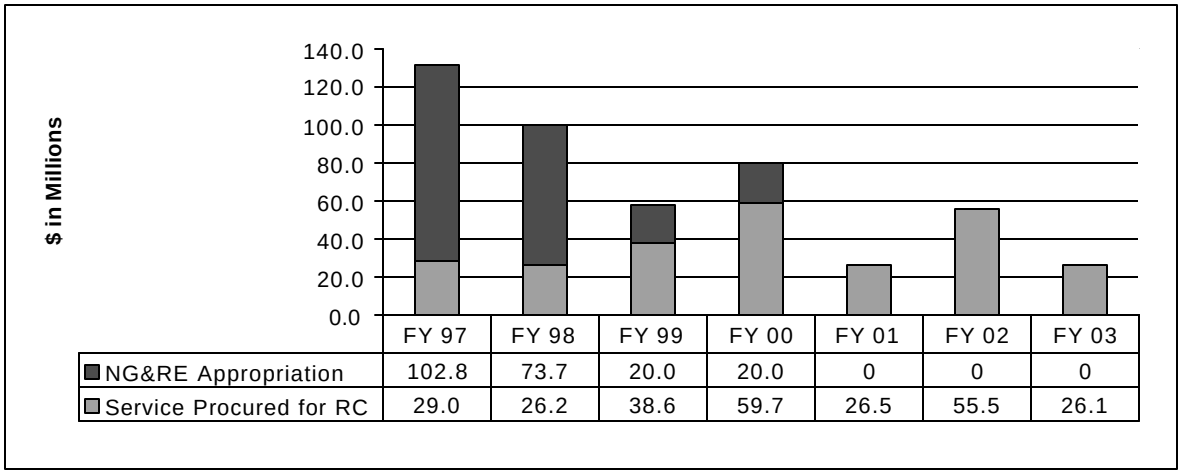
The Marine Corps Reserve's greatest short-term readiness and modernization need is in the aviation community. Upgrading the fleet of 48 F/A-18A's with Engineering Change Proposal 583 is the

top readiness, and most expensive, modernization priority. This upgrade provides the capability to self-designate precision munitions, to employ the newest generation of air-to-ground and air-to-air weapons, and to conduct night operations. Moreover, it provides the 4th Marine Aircraft Wing with a state-of-the-art Fighter/Attack aircraft that is operationally and logistically compatible with the Active component. Analyzing the current aircraft inventory, it appears that the "A" model aircraft will remain in the Active inventory through the 2015 time frame and bridge the gap to the Joint Strike Fighter (JSF). Therefore, it is essential that the F/A-18A remain viable and sustainable well beyond the year 2000.

The Marine Corps Reserve's second modernization priority is upgrading the remaining CH-53E helicopters with the helicopter night vision system (HNVS). The HNVS improves the capability to navigate and operate at night and during periods of reduced visibility. This capability is consistent with the full operational and logistical integration of Reserve and Active forces. Also needed is the KC-130T Avionics Modernization Program which closely parallels the USAF C-130 modernization effort. The current Reserve aircraft configuration is not compliant with emerging Communication, Navigation, and Surveillance/Air Traffic Management or mandated Navigation and Safety requirements. The Marine Corps' longer-term goals include acceleration of the MV-22 (Tilt-Rotor Aircraft) fielding to the Reserve. Funding these and other modernization initiatives to maintain readiness and safety will facilitate the effective integration of Reserve aviation assets with the Active component.

While fixed and rotary wing aviation modernization is the most pressing need of the Marine Corps Reserve, a balanced approach concerning vital ground combat and logistics modernization will ensure the Reserve component remains an effective combined arms team. Over the next decade, the Marine Corps will field the Medium Tactical Vehicle Replacement (MTVR), High Mobility Multi-Purpose Wheeled Vehicles (HMMWV) A2, Lightweight 155mm Howitzer, and the Advanced Amphibious Assault Vehicle (AAAV), new Command and Control Systems and other key individual weapon systems and support equipment. However, in the interim it will be a challenge to maintain the equipment currently on-hand.

Chart 1
USMCR Equipment Procurement Comparison



	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03
NG&RE Appropriation	102.8	73.7	20.0	20.0	0	0	0
Service Procured for RC	29.0	26.2	38.6	59.7	26.5	55.5	26.1

One of the positive consequences of the Reserve component's ability to augment the Active component seamlessly is that additional procurement funds for Reserve equipment has increased in recent years as depicted in *Chart 1* on the previous page. These additional PMC (P-1R) funds have helped to off-set declines in other appropriations available to the Reserves.

As a result of the additional Marine Corps Procurement funds applied to equipment for the Reserves, the Marine Corps Reserve is able to procure additional Reserve equipment to help meet their requirements. Some of the more significant items recently identified for procurement are listed on *Chart 2*.

Chart 2
USMCR Selected Procurement Items

Program	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
Assault Amphibious Veh 7A1 PIP	2.00	2.00	2.00	23.10	
Light Armor Veh PIP	0.20	0.30	0.30	7.00	6.50
Javelin Weapon System	5.40	5.60		0.20	0.20
Predator (SRAW)				1.90	1.90
Truck Utility (HMMWVA2)		13.00	12.90	13.30	13.80
Training Devices			5.80	6.10	0.20
General Purpose Electronic Test Eq			1.20	1.20	1.20
Container Family	1.50	1.20	1.00	1.20	1.30
Common End User Computer Eq	2.00	2.00			
F/A 18, ECP 583	18.00	18.00			

The modernization of automated data processing (ADP) equipment in the Marine Corps Reserve continues. The Reserve Information Network (R-NET) evolution, in conjunction with congressional NGREA funds (applied from the Common End User Computer funding line), has allowed for the development of a Career Management Team (CMT) at the Headquarters, Marine Corps level. The CMT is currently creating a Web enabled, Selected Marine Corps Reserve (SMCR) billet vacancy search application. Once the Marine finds a billet opening that is suitable, this system will enable the Marine to submit an application. This system will greatly assist the Manpower planners as well as the individual Marine. Other computer related programs continue to make a significant impact on the ability of the Reserves to facilitate timely communication and coordinate and/or develop exercise plans and orders for geographically dispersed Reserve locations. Future use is envisioned to coordinate multi-unit simulated tactical training, military occupational specialty training, video tele-training and conferencing, multimedia training, and to provide information sharing and exchange among reservists between scheduled drill periods.

Aging equipment and the maintenance of aging equipment continue to be one of the most significant readiness issues for the Marine Corps. Although total procurement funding for the RC has increased from FY 1999, ground equipment procurement and modernization have been under funded

for the past several years. Even with the receipt of the new equipment, the Marine Corps will have to continue to maintain the existing equipment until the replacements are fully fielded. The key to rectifying this situation is through the acceleration of force modernization plans.

The Reserve component is also experiencing a trend in rising maintenance costs. Maintainers are finding that because aging equipment is breaking down more frequently they are devoting more time and effort to corrective maintenance. This trend has been particularly manifested with MARFORRES mechanized vehicles, such as Tanks, AAVs and LAVs. It is more difficult and costly to maintain these systems at the desired levels of operational readiness. In an attempt to stem the tide of rising maintenance costs and improve equipment reliability, the Reserve component is participating in two Marine Corps-wide maintenance initiatives: 1) The AAV Reliability-Availability-Maintainability / Rebuild to Standard (RAM/RS) program and
2) The LAV Service Life Extension Program (SLEP). The RAM/RS program is currently underway and scheduled to be completed in FY 2002. This maintenance improvement program will help maintain the Marine Corps' fleet of AAVs in the most cost-effective manner until they are replaced by the new AAAV. The new AAAV's will begin to be delivered to the Marine Corps in FY 2005 and be completed in FY 2012. The Reserve fielding plan is still being developed. The LAV SLEP is scheduled from FY 2002 – 2005 and will also help improve the capability and reliability of MARFORRES owned LAVs. *Table 2* at the end of this narrative provides a further perspective on the average age of some key selected major items of equipment.

e) Marine Corps Plan to Achieve Full Compatibility between AC and RC: The Marine Corps' use of a single AAO, (which incorporates equipment modernization plans) addresses all initial quantities and planned sustainability requirements for Active and Reserve units. The single AAO concept will continue to be utilized in the future. The policy of horizontal fielding, within fiscal constraints, ensures tactical and logistical interoperability/compatibility are maintained. Continued Marine Corps acquisitions using NGREA funds permit Reserve units to be equipped to the same standards as the Active component. Unlike the other Services, there are no unique Reserve missions that would require different types of equipment than what is currently available to both the Active and Reserve components. Fiscal constraints sometimes preclude the Reserves from acquiring certain types of equipment as fast as the Active component. This is primarily manifested in the aviation community. Currently, new approaches are being taken to overcome these deficiencies such as the Engineering Change Proposal (ECP) 583 that is successfully working for the upgrade of both the Reserve and Active F/A-18 aircraft.

f) Other Marine Corps Specific Issues and Initiatives: The Marine Corps Reserve is an essential part of the expeditionary force and is seamlessly integrated into the working groups that are developing plans, concepts, organization, and doctrine that will affect the Corps into the 21st Century. One of the competitive advantages the Marine Corps enjoys is the seamless integration of the Reserve component with the Active component. Some emerging concepts and initiatives that will affect both the Active and the Reserve components are as follows:

(1) Operational Maneuver from the Sea (OMFTS): OMFTS is a naval concept developed by the Marine Corps and executed in concert with the Navy. OMFTS is a new approach to littoral power projection in which the Marines apply the tenets of maneuver warfare in the context of amphibious operations. In OMFTS, naval forces focus on operational objectives using the sea as maneuver space. Through sea-basing, OMFTS emphasizes greater operational initiative and flexibility as forces will be liberated from establishing large shore-based logistics support areas and the requisite rear area security to protect them. OMFTS is also driving logistic changes through Precision Logistics.

(2) Precision Logistics: Precision Logistics is the Marine Corps logistics initiative designed to define the priorities and direction for logistics process improvement. Through Precision Logistics the Marine Corps has been able to right-size its supply inventories, reduce logistics response time and improve asset visibility. These logistical improvements have helped the Active and Reserve components achieve efficiencies in supply chain management and material distribution.

(3) ATLASS II +: The Marine Corps is in the process of developing and testing a new logistics information system called Asset Tracking Logistics and Supply System II+ (ATLASS II +). ATLASS II + is the Marine Corps' planned future integrated supply, maintenance, and resource reporting system. ATLASS II + is scheduled to be fielded to the Total Force to include bases, posts and stations by FY 2003. It integrates mainframe maintenance supply systems into a tiered, client-server based system. This system offers considerable improvements in asset visibility, reduced logistics response time and an improved approach to stockage criteria. Currently, ATLASS II+ has been pilot tested with test bed units within II MEF, Camp Lejeune, NC. The pilot test was a success in verifying the systems capabilities and deficiencies in a user environment. A Milestone III decision is scheduled for 2nd Qtr FY 2000.

(4) Modeling and Simulation: The Marine Corps Active and Reserve components are actively pursuing modeling, simulation, and advance training devises and technologies to increase Marine Corps Total Force operational and training effectiveness. This technology and approach will provide our units with the capability to train and maintain combat proficiency and related skills at the home training center. This reduces the expenditure of ammunition, lessens the wear and tear on equipment, and provides a variety of combat scenarios at the tactical and strategic levels.

II. Marine Corps Reserve Overview

a) Current Status of the Reserve Component

(1) General Overview: The Marine Corps procurement budget continues to focus on the development and procurement of technologies and systems that support making Marines and winning battles for the Nation. The current budget continues an upward trend in the pace of modernization that continues through the FYDP. Several major replacement, remanufacture and modernization programs are included in the next several years such as the High Mobility, Multipurpose Wheeled Vehicle (HMMWVA2), the Medium Tactical Vehicle Replacement (MTVR) and the Assault Amphibious Vehicle (AAV) RAM/Rebuild to Standard (RAM/RS). The HMMWVA2 program will replace the current aging inventory of first generation HMMWVs, and the low-rate initial procurement of 240 MTVRs under multi-year procurement commenced in FY 1999. This program will remanufacture 5-ton trucks over the next five years and provide for the economical replacement of the current medium truck fleet with enhanced off-road capabilities.

The current plan supports enhanced firepower with the continued multi-year procurement of the Javelin Missile, a medium range, man-portable, anti-tank weapon designed to replace the Dragon System. Development, prototyping and engineering efforts also continue for the Lightweight (LW) 155mm howitzer, a replacement for the aging, operationally deficient M198 howitzer.

A significant portion of the Marine Corps FY 2000 ground Research and Development budget is dedicated to the AAAV, which will replace the thirty year old Assault Amphibious Vehicle. Also continuing in the budget will be the development of the Short-range Anti-Armor Weapon (Predator), which is a lightweight, disposable, main battle tank killer. Additionally, as the DoD Executive Agent for Non-lethal Weapons (NLW), the Marine Corps will continue to finance NLW research and development.

(2) Status of Equipment

(a) Equipment On-Hand: The equipment the Reserve component maintains on hand consists of a T/A which represents approximately 88 percent of the MARFORRES wartime equipment requirement. As previously discussed, the T/A is tailored to the quantity and type of equipment that can be adequately maintained and stored at Reserve training centers. The Marine Corps' goal of procuring, issuing, and maintaining standard combat equipment against the T/A is being met.

(b) Average Age of Major Items of Equipment: See *Table 2*. See Section I, d for a complete discussion.

(c) Compatibility of Current Equipment with AC: See Section I, paragraph e.

(d) Maintenance Programs: The Reserves are working hard to maintain and improve the materiel readiness of their equipment. This section briefly reviews the Depot Maintenance Program, Intermediate Maintenance initiatives and Corrosion Control.

1. Depot Maintenance: The Reserves continue to be more proactive in articulating their depot maintenance requirements. These requirements are determined through the annual Marine Corps Depot Maintenance Process. Although the repair of many In-stores assets is unfunded, the Reserves receive the equipment they need to sustain training requirements. The Reserves are also using an optimization model, which enables them to conduct sensitivity analysis to optimize readiness levels within funding constraints.

2. Intermediate Maintenance Initiatives: In order to mitigate increasing maintenance costs, MARFORRES has implemented better business practices by outsourcing and competitively bidding some of its 4th echelon maintenance repair requirements. Specifically, they have outsourced some of its Tank Maintenance requirements to the Army's Anniston Depot in Alabama, and have outsourced its diesel engine remanufacture to UNICOR in Beaumont, TX. Initial data analysis from these outsourcing practices shows considerable savings and quicker turn-around time.

3. Corrosion Control: One of the key components in achieving an effective preventive maintenance program is a consistent corrosion control and coating program. MARFORRES is attempting to purchase individual dehumidification systems for their mechanized vehicles. These systems will prevent the detrimental effects of moisture intrusion on sophisticated and expensive electrical components and circuitry. MARFORES' goal is to purchase enough systems to outfit all of its mechanized and armored vehicles.

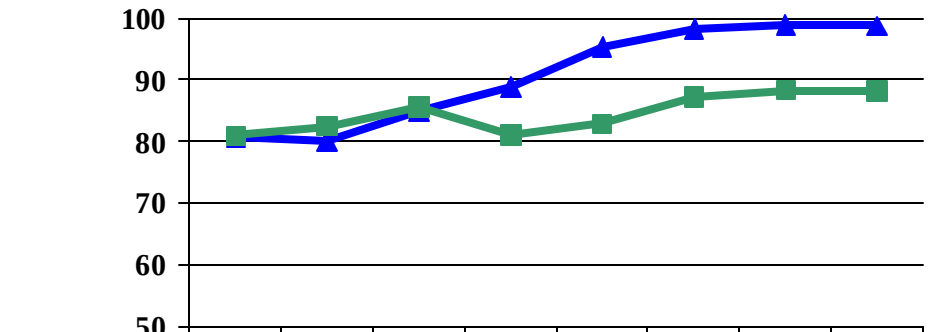
4. Controlled Humidity Preservation (CHP): To enhance the material readiness of their In-stores assets, MARFORRES is currently studying the feasibility of establishing a Long-term CHP Storage Program. The intent of this program is to arrest the damaging effects of corrosion, improve equipment readiness, and achieve cost savings by deferring the maintenance of that equipment. Although further cost-benefit analysis is required, this type of program could yield considerable efficiencies.

(e) Modernization Shortfalls: These shortfalls were addressed in Paragraph 1, subparagraph d. A list of current shortfalls is provided later in the report.

(f) Equipment Readiness: The Reserves are ready to execute their assigned mission but must continue to modernize to sustain future readiness. The readiness percentages below reflect the operational condition and availability of Reserve readiness reportable ground requirement. This requirement consists of the T/A and In-stores assets held at MARCORLOGBASES. The readiness condition of the MARFORRES T/A is typically kept in a high readiness condition. However, the operational readiness of the In-stores assets is lower, which in turn lowers the aggregate readiness of the Reserve component. The impact of past funding shortfalls and the lower priority of funding for the

maintenance of these assets results in many items being held in a Not-Ready-For-Issue (NRFI) condition.

Chart 3
Total Requirement (T/A and In-Stores



	1stQtr 98	2nd Qtr 98	3rd Qtr 98	4th Qtr 98	1st Qtr 99	2nd Qtr 99	3rd Qtr 99	4th Qtr 99
"S" Rating	80.7	80.1	84.9	88.9	95.4	98.2	98.8	98.7
"R" Rating	80.9	82.5	85.6	81.1	82.9	87.2	88.3	88.1

Note: This graph depicts the MARFORRES average ground equipment ratings for the past two fiscal years. The "S" rating shows the quantity of equipment and the "R" rating depicts the condition of that equipment.

The Reserve component is using a readiness information tool called Marine Corps Readiness Equipment Module –Reserves (MCREM-R); which is funded by OSD/RA. Headquarters, Marine Corps in conjunction with the Logistics Management Institute (LMI) developed this program. This program was originally provided and modified from the OSD. MCREM-R assists MARFORRES in calculating the Reserve Unit Priority System (RUPS) equipment ratings for the Reserve T/E and facilitates the application of the In-Stores assets, which provides better visibility of readiness and In-stores equipment. This process is the primary reason why the S-rating trend is in a high status. In addition to improving and assisting with ground equipment readiness reporting, this tool enables Maintenance and Supply personnel to "dig down" and analyze the causes and reasons why their equipment is deadlined.

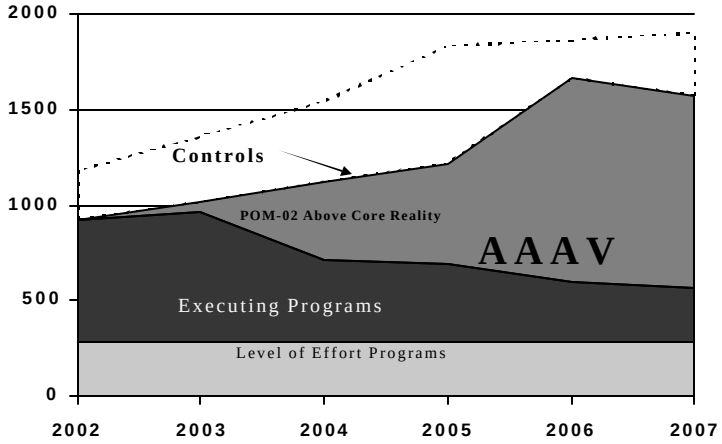
The Marine Corps is involved at all levels with the Navy budgeting process to ensure Marine Aviation remains a valid asset to the CINCs.

b) Changes Since Last NGRER: During the past year, the Office of the Assistant Secretary of Defense for Reserve Affairs conducted a Joint Working Group to review the NGRER report process and format. This report reflects the changes made to the narrative outline and data table display.

c) Future Years Program (FY 2001 - 2003): While the Marine Corps made a decision several years ago to modernize the 30-year old, rapidly deteriorating, fleet of Assault Amphibious Vehicles with a new Combat Vehicle, the procurement of the new Advanced Assault Amphibious Vehicles (AAAV) was necessary to remain a relevant deterrent force in readiness. The cost of the new

vehicles will be the most expensive ground equipment project the Marine Corps has ever faced. Meticulous planning is taking place to ensure that when full production of new vehicles starts there are measures in place to maintain the procurement of other equipment. This program will dramatically reduce the number of new initiatives that can be considered for filling future requirements for both the Active and Reserve components. Graphically displayed in *Chart 4* below is the impact of the AAAV procurement on other existing programs. A large effort is currently taking place to complete the procurement of as many programs as possible before the AAAV "Bow Wave" becomes a reality.

Chart 4
Advanced Amphibious Assault Vehicle (AAAV)



d) Remaining Shortfalls and Unfunded Requirements: A short synopsis of the Marine Corps Reserve's latest shortfall list, which was submitted to Congress in accordance with Title 10, USC, section 10543(C) for FY 2000, is provided in *Chart 5*.

Chart 5
USMCR Shortfall List (FY 2000)
($ in Millions)

Priority	Item	Amount	Priority	Item	Amount
1	F/A-18A+ (ECP-583)	20.0	11	GCP-2A Infrared Target Marker	0.2
2	CH-53 HNVS	9.3	12	Aviation Manta. Training Continuum	0.6
3	NBC Equipped	1.6	13	Controlled Enviro. Storage Shelters	3.6
4	Common End User Computer	2.2	14	CH-53 Flight Simulator	10.0
5	KC-130T avionics upgrade	16.8	15	Quadcon	6.1
6	AN/AAS-38 FLIR	9.7	16	Pallet Container	4.6
7	Cargo Handler	1.0	17	Containerized Laundry Unit	0.3
8	AH-1W Night Targeting System	2.3	18	Special Applications Scoped Rifle	0.2
9	AN/FCC-100 Multiplexor	1.2	19	CH-46 Flight Simulator	10.0
10	M1A1 Dehumidifiers	0.1			
				TOTAL	**$99.80**

e) Summary/Conclusions: Modernization of the Reserve component must parallel the modernization of the Active component to ensure the readiness of the Total Force in order to fight and win tomorrow's battles. The Marine Corps Reserve is ready today, but its readiness has come at the expense of investment in modernization, infrastructure, and quality of life accounts. The outlook for resourcing and long term readiness is improving as the Marine Corps Reserve transitions into the 21st Century. The Reserve goal remains unchanged--to remain an integral part of the Total Force Marine Corps, designed and equipped to seamlessly augment and reinforce the Regular Component to win in battle.

USMCR
Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
AIRBORNE MOBILE DIRECT AIR SUPT CNTRL	A0010	435,000	2	2	2	2	**2**
COMM GEAR	A0011	56,100	136	136	136	136	**136**
AUTO TELEPHONE AN/TTC-42(V)	A0248	1,549,380	10	10	10	10	**10**
COMMUNICATIONS CENTRAL (MECCS)	A0274	500,000	4	4	4	4	**4**
COMMUNICATIONS TECH CTRL CENTER	A0311	185,000	3	3	3	3	**5**
DECODER GROUP	A0465	29,837	14	14	14	14	**14**
DIRECT AIR SUPPORT CENTRAL (IMPROVED)	A0512	674,000	2	2	2	2	**2**
SATELLITE COMMUNICATIONS CENTRAL	A0655	287,000	3	3	3	3	**3**
GROUND MOBILE FORCE SATELLITE COM TERMINAL	A0812	1,201,000	1	1	1	1	**1**
COMMUNICATIONS TERMINAL, AN/TSC-93B	A0814	600,000	4	4	4	4	**4**
INTERROGATOR SET	A0881	29,000	12	12	12	12	**12**
TACTICAL DEFENSE ALERT, RADAR SET	A0891	235,000	17	17	17	17	**17**
MANPACK SATELLITE COMMUNICATIONS TERMINAL	A0917	24,000	86	86	86	86	**86**
QUICK REACTION SATELLITE ANTENNA	A1310	225,000	3	3	3	3	**3**
RADAR SET, FIREFINDER	A1440	887,000	5	5	5	5	**5**
RADAR SET, LTWT AIR TRAFFIC CONTROL, AN/TPS-63B	A1500	3,865,675	4	4	4	4	**4**
RADAR SET, LIGHTWEIGHT 3D	A1503	8,579,000	2	2	2	2	**2**
COMM GEAR	A1530	161,141	60	60	60	60	**60**
ANTENNA COUPLER GROUP	A1650	367,840	4	4	4	4	**4**
RADIO SET, AN/GRC-193B (V)	A1795	14,000	68	68	68	68	**68**
RADIO SET, AN/GRC-171B	A1818	50,000	82	82	82	82	**82**
RADIO SET, AN/MRC-140	A1920	67,000	2	2	2	2	**2**
RADIO SET, AN/MRC-138B(V)	A1935	64,000	222	222	222	222	**247**
RADIO TERMINAL SET, AN/MRC-142	A1955	180,000	64	64	64	64	**64**
RADIO SET, AN/MRC-145	A1957	42,000	312	326	326	326	**326**
RADIO SET, AN/PRC-104 B(V)	A2065	15,000	637	717	717	717	**717**
RADIO SET, UHF, AN/PRC-113(V)3	A2069	16,169	383	383	383	383	**383**
RADIO SET, MANPACK, AN/PRC-119A	A2070	10,117	1,548	1,556	1,556	1,556	**1,556**
RADIO SET, MANPACK, AN/PRC-119D	A2073	14,000	549	549	549	549	**567**
RADIO SET, VEHICULAR, AN/VRC-88D	A2074	15,145	389	389	389	389	**411**
RADIO SET, VEHICULAR, AN/VRC-89D	A2075	12,000	42	42	42	42	**42**
RADIO SET, VEHICULAR, AN/VRC-90D	A2076	12,000	4	4	4	4	**4**
RADIO SET, VEHICULAR, AN/VRC-91D	A2077	14,000	48	48	48	48	**48**
RADIO SET, VEHICULAR, AN/VRC-92D	A2078	16,000	33	33	33	33	**33**
RADIO SET, AN/VRC-83(V)2	A2164	15,000	86	86	86	86	**122**
RADIO SET, VEHICULAR, AN/VRC-88A	A2167	12,000	538	538	538	538	**538**
RADIO SET, VEHICULAR, AN/VRC-89A	A2168	22,000	90	94	94	94	**94**
RADIO SET, VEHICULAR, AN/VRC-90A	A2169	13,178	124	129	129	129	**129**
RADIO SET, VEHICULAR, AN/VRC-91A	A2170	23,249	18	18	18	18	**18**
RADIO SET, VEHICULAR, AN/VRC-92A	A2171	21,238	4	4	4	4	**4**
RADIO TERMINAL, DIGITAL TROPOSCATTER	A2179	600,000	22	22	22	22	**24**
SWITCHBOARD, TELEPHONE, AUTOMATIC, SB-3614	A2505	35,000	75	75	75	75	**75**
SWITCHING UNIT, TELEPHONE, AUTOMATIC, SB-3865	A2508	228,535	59	65	65	65	**65**
TACTICAL AIR OPERATIONS MODULE (TAOM)	A2525	4,000,000	8	8	8	8	**8**
AIR CONDITIONER, MCS HORIZONTAL, 60HZ 9,000 BTU	B0001	4,694	48	48	48	48	**48**
AIR CONDITIONER, MCS HORIZONTAL, 60HZ 18,000 BT	B0002	5,356	59	59	59	59	**59**
AIR CONDITIONER, MCS VERTICAL, 60,000 BTU	B0007	11,000	24	24	24	24	**24**
AIR CONDITIONER, MCS, SKID MOUNTED	B0011	3,998	61	61	61	61	**61**
AIR CONDITIONER, VERTICAL, 60/400HZ, 18,000 BTU	B0012	5,000	250	250	250	250	**250**
BOAT, BRIDGE ERECTION	B0114	170,000	18	18	18	18	**18**
BRIDGE ERECTION SET -MGB-	B0120	415,000	8	8	8	8	**8**

USMCR Table 1

Consolidated Major Item Inventory and Requirements

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
BRIDGE, MEDIUM GIRDER, DRY GAP	B0152	964,000	12	12	12	12	**12**
CONTAINER HANDLER, ROUGH TERRAIN, 50,000 LB	B0391	350,000	4	13	13	13	**13**
CRANE, HIGH SPEED, HIGH MOB, W/PILE DRIVER CAP	B0443	194,000	15	15	15	15	**15**
CRANE, ROUGH TERRAIN, HYDRAULIC LIGHT	B0446	61,114	53	53	53	53	**53**
FUEL DISP. SYS TACTICAL AIRFIELD FIRESTONE	B0675	331,000	20	20	20	20	**20**
GENERATOR SET, 3 KW, 60 HZ, SKID-MOUNTED	B0730	4,000	234	234	234	234	**234**
GENERATOR SET, SKID-MTD, TACT QUIET, 10 KW 60 H	B0891	13,635	171	171	171	171	**171**
GENERATOR SET, SKID-MTD, TACT QUIET, 10 KW 400	B0921	11,000	11	12	12	12	**12**
GENERATOR SET, SKID-MTD, TACT QUIET, 30 KW 60 H	B0953	14,000	192	252	252	252	**252**
GENERATOR SET, SKID-MTD, TACT QUIET, 30 KW 400	B0971	20,232	8	8	8	8	**8**
GENERATOR SET, SKID-MTD, TACT QUIET, 60 KW 400	B1016	18,000	16	16	16	16	**16**
GENERATOR SET, SKID-MTD, TACT QUIET, 60 KW 60 H	B1021	16,000	114	114	114	114	**114**
GENERATOR SET, 100 KW, 60 HZ, SKID MOUNTED	B1045	40,000	38	38	38	38	**38**
GRADER, ROAD, MOTORIZED	B1082	125,000	20	20	20	20	**20**
HELICOPTER EXPEDIENT REFUELING SYSTEM	B1135	101,000	15	15	15	15	**18**
LIGHTWEIGHT DECONTAMINATING SYSTEM	B1291	14,000	194	194	194	194	**194**
LINE CHARGE LAUNCH KIT, TRAILER MOUNTED	B1298	4,000	45	45	45	45	**45**
PUMP MODULE, FUEL (SIXCON)	B1580	23,000	69	69	69	69	**69**
SCRAPER-TRACTOR, WHEELED	B1922	136,879	12	12	12	12	**12**
STORAGE TANK MODULE, FUEL (SIXCON)	B2085	7,000	266	266	266	266	**266**
TRACTOR, FULL TRACKED, W/ANGLE BLADE	B2460	80,234	31	31	31	31	**31**
TRACTOR, MEDIUM, FULL TRACKED, D7G CATERP	B2462	192,000	58	58	58	58	**58**
TRACTOR, ALL WHEEL DRIVE W/ATTACHMENTS	B2482	99,000	26	26	26	26	**26**
TRUCK, FORKLIFT, EXTENDABLE BOOM	B2561	89,500	67	67	67	67	**67**
TRUCK, FORKLIFT, ROUGH TERRAIN, 4,000 LB	B2566	45,000	75	75	75	75	**75**
TRACTOR, ROUGH TERRAIN, ARTICULATED STEER	B2567	92,000	96	96	96	96	**96**
WATER PURIFICATION UNIT - REVERSE OSMOSIS	B2604	69,949	44	44	44	44	**44**
POWER UNIT, FRONT, 12 1/2 TON, 4X4	D0209	137,000	162	162	162	162	**162**
SEMI-TRAILER, REFUELER, 5,000 GAL, 4-WHEEL	D0215	87,000	38	56	56	56	**60**
SEMI-TRAILER, LOWBED, 40 TON	D0235	45,000	39	39	39	39	**39**
TRLR, POWERED, 22 1/2 T, CONTAINER HAULER, 4X4	D0876	64,000	233	233	233	233	**233**
TRAILER, POWERED, WRECKER/RECOVERY, 4X4	D0877	134,000	22	22	22	22	**22**
TRLR, 5TH-WHL 4X4, SEMI-TRLR ADAPTER	D0878	48,000	60	60	60	60	**60**
TRLR, 20 TON 4X4 CARGO W/CRANE	D0879	134,000	65	65	65	65	**65**
TRAILER, TANK, WATER, 400 GAL, 1 1/2 TON 2-WHL	D0880	7,000	282	282	282	282	**282**
TRAILER, RIBBON BRIDGE	D0881	123,000	100	100	100	100	**100**
TRUCK, AMB, 4 LITTER ARMD, 1 1/4 TON HMMWV	D1001	67,000	21	97	97	97	**97**
TRUCK, AMB, 2 LITTER, SOFT TOP, 1 1/4 TON HMMWV	D1002	31,000	51	51	51	51	**51**
TRUCK, CARGO, 5 TON, 6X6, W/O WINCH	D1059	97,000	1,096	1,096	1,096	1,096	**1,096**
TRK CARGO, 5T EXTRA LONG WHL BASE, W/WINCH	D1061	55,000	131	131	131	131	**139**
TRK AIRCRAFT CRASH & STRUCTURE FIRE FIGHTING	D1064	162,000	24	24	24	24	**24**
TRK DUMP M817/M929/M930	D1072	101,000	86	86	86	86	**86**
TRK, TOW CARRIER, W/SA, 1 1/4T, W/EQUIP, HMMWV	D1125	41,000	196	196	196	196	**196**
TRUCK, TRACTOR, 5 TON, 6X6, W/O WINCH	D1134	71,000	61	61	61	61	**61**
TRK, UTIL, CARGO, 5/4 T W/EQUIP HMMWV	D1158	35,000	1,867	1,867	1,867	1,867	**1,867**
TRK, UTIL, ARMT CARR, W/SA 1 1/4T W/EQUIP HMMWV	D1159	40,000	304	304	304	304	**304**
TRUCK, UTILITY, SHELTER CARRIER, W/OW, 1 1/4T	D1180	37,000	40	40	40	40	**40**
TRUCK, WRECKER, 5 TON, 6X6	D1212	135,000	60	60	60	60	**60**
BOTTLE CLEANING/CHARGING STATION (BCCS)	E0145	171,000	2	2	2	2	**2**
BRIDGE, SCISSOR F/ AVLB	E0149	176,000	12	12	12	12	**12**
BRIDGE, ARMORED VEHICLE LAUNCHED	E0150	592,000	8	8	8	8	**8**
CHARGER, BATTERY	E0167	4,867	41	41	41	41	**41**
CIRCLE, AIMING	E0180	2,000	145	145	145	145	**145**
EQUIPMENT SET, NIGHT VISION	E0330	54,000	216	216	216	216	**216**
HOWITZER, MEDIUM, TOWED, 155MM	E0665	750,000	90	90	90	90	**90**
INTERROGATOR SET, PROGRAMMER (STINGER)	E0726	19,121	18	18	18	18	**18**

Consolidated Major Item Inventory and Requirements

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
INTERROGATOR SET, IFF (STINGER)	E0727	18,000	180	180	180	180	**180**
ASSAULT AMPHIBIOUS VEHICLE, COMMAND	E0796	1,052,000	10	10	10	10	**10**
ASSAULT AMPHIBIOUS VEHICLE, PERSONNEL	E0846	987,000	103	103	103	103	**103**
ASSAULT AMPHIBIOUS VEHICLE, RECOVERY	E0856	1,159,000	8	8	8	8	**8**
LAUNCHER, ASSAULT ROCKET, 83MM (SMAW)	E0915	7,000	234	234	234	234	**234**
LAUNCHER, TUBULAR, F/GM TOW WEAPON SYSTEM	E0935	73,536	214	214	214	214	**214**
LAV, ANTI-TANK	E0942	840,000	16	16	16	16	**16**
LAV, COMMAND AND CONTROL (BN)	E0946	592,000	8	8	8	8	**8**
LAV, LIGHT ASSAULT, 25MM	E0947	801,000	60	60	60	60	**60**
LAV, LOGISTICS	E0948	825,000	16	16	16	16	**16**
LAV, MORTAR	E0949	528,000	8	8	8	8	**8**
LAV, MAINTENANCE/RECOVERY	E0950	488,000	6	6	6	6	**6**
MACHINE GUN, CAL .50, BROWNING, HB FLEXIBLE	E0980	8,110	496	496	496	496	**496**
MACHINE GUN, MEDIUM, 7.62MM, GROUND VERSION	E0989	6,000	834	834	834	834	**834**
MACHINE GUN, 40MM	E0994	14,000	497	497	497	497	**497**
ORDINANCE	E1035	520,000	5	5	5	5	**5**
MODULAR UNIVERSAL LASER EQUIPMENT (MULE)	E1045	218,000	137	137	137	137	**137**
MORTAR, 60MM LWCMS	E1065	11,000	81	81	81	81	**81**
MORTAR, MEDIUM, EXTENDED RANGE	E1095	24,000	80	80	80	80	**80**
NIGHT VISION SIGHT, TRACKER, INFRARED	E1153	23,000	108	108	108	108	**108**
NIGHT VISION SIGHT, CREW SERVED WEAPON	E1159	3,433	426	426	426	426	**426**
POSITION AZIMUTH DETERMINATION SYS(PADS)	E1210	299,115	21	21	21	21	**21**
RECOVERY VEH FULL TRACK M88	E1377	758,000	13	13	13	13	**13**
RIFLE, SNIPER, 7.62MM, W/O EQUIPMENT	E1460	2,315	99	99	99	99	**99**
RIFLE, SNIPER, SEMI-AUTO, CAL .50, REPEATER	E1475	5,329	27	27	27	27	**28**
PEDESTAL MOUNTED STINGER (AVENGER)	E1836	1,059,018	60	60	60	60	**60**
RECEIVER, INFRARED	E1837	24,068	109	109	109	109	**109**
TANK, COMBAT, FT, 120MM GUN	E1888	2,393,000	64	64	64	64	**64**
TEST KIT, SUPPLEMENTAL GMS EQUIPMENT	E1908	110,274	2	2	2	2	**2**
TEST SET, MISSILE GUIDANCE	E1911	20,366	36	36	36	36	**36**
TEST SET, GM	E1912	393,562	16	16	16	16	**16**
TEST SET, GUIDED MISSILE, INFRARED TRACKER	E1915	59,012	8	8	8	8	**8**
TEST SET, GM SYSTEM (DRAGON)	E1916	207,921	4	4	4	4	**4**
TEST SET GROUP, GM INFRARED TRACKER	E1917	35,000	4	4	4	4	**4**
TEST SET, NIGHT VISION	E1947	27,000	8	8	8	8	**13**
TRACKER, INFRARED, GM, DRAGON	E3175	8,000	56	56	56	56	**56**
AIRCRAFT,HELICOPTER, UTILITY, UH-1, MODEL N	UH-1N	5,332,000	20	20	20	20	**18**
AIRCRAFT,HELICOPTER, CARGO, CH-53, MODEL E	CH-53E	30,182,000	21	21	21	21	**16**
AIRCRAFT,HELICOPTER, ATTACK, AH-1W	AH-1W	15,147,000	40	40	40	40	**38**
AIRCRAFT,HELICOPTER, CARGO, CH-46, MODEL E	CH-46E	10,913,000	26	26	26	26	**24**
AIRCRAFT, REFUELING/CARGO, KC-130, MODEL T	KC-130T	33,420,000	28	28	28	28	**24**
AIRCRAFT, UTILITY CARGO, UC-12 MODEL B	UC-12B	3,341,000	4	4	4	4	**4**
AIRCRAFT,FIGHTER/ATTACK,F/A-18,MODEL A	F/A-18A	41,605,000	48	48	48	48	**48**
AIRCRAFT, FIGHTER, F-5, MODEL E	F-5E	7,865,000	12	12	12	12	**12**
AIRCRAFT, FIGHTER, F-5, MODEL F	F-5F	11,520,000	1	1	1	1	**1**
AIRCRAFT, UTILITY CARGO, C-20G	C-20G	37,465,000	1	1	1	1	**1**
AIRCRAFT, UTILITY CARGO, UC-35C	UC-35C	4,500,000	2	2	2	2	**2**

USMCR
Average Age of Equipment

NOTE: This table provides the average age of selected major items of equipment. Since equipment is normally procured over several years, the average age provides a projected average age of the fleet for budget year (BY) 2001.

NOMENCLATURE	*EQUIP No.*	*AVERAGE AGE*	*REMARKS*
RADIO SET MRC-138B	A1935	20	
RADIO TERMINAL AN/TRC-170	A2179	9	
CRANE MOUNTED TRUCK	B0443	12.5	
GENERATOR SET 100KW	B1045	25	
WATER PURIFICATION UNIT - REVERSE OSMOSIS	B2604	16	Being replaced with the EROWPU
AIRCRAFT REFUELER	D0215	15	
TRUCK, LVS	D0209	10	
TRUCK 5 TON	D1059	21	Being replaced with the Medium Tactical Vehicle (MTVR)
TRUCK, HMMWV	D1158	14	Being replaced with the HMMWV A2
HOWITZER, MEDIUM, TOWED, 155MM	E0665	19	Being replaced with the Light Wieght Howitzer
ASSAULT AMPHIBIOUS VEHICLE, PERSONNEL	E0846	29	Being Replaced with AAAV, RAMRS program will help improve fleet reliability (FY99-02), last Service Life Extension Program occured between 1982-1986.
LAV, LIGHT ASSAULT, 25MM	E0947	16	SLEP occurring from FY 02-05
RECOVERY VEH FULL TRACK M88	E1377	20.5	Being replaced by the M88A2 (HERCULES)
TANK, COMBAT, FT, 120MM GUN	E1888	10	
HELICOPTER, UTILITY, UH-1, MODEL N	F0021	27	
HELICOPTER, CARGO, CH-53, MODEL E	F0019	11	Note: 9 aircraft will be 18 yrs in average the rest are new
HELICOPTER, ATTACK, AH-1W	F0017	10	
HELICOPTER, CARGO, CH-46, MODEL E	F0016	34	
AIRCRAFT, REFUELING/CARGO, KC-130, MODEL T/F/R	F0011	13	
AIRCRAFT, UTILITY CARGO, UC-12 MODEL B	F0009	18	
AIRCRAFT,FIGHTER/ATTACK,F/A-18,MODELS A/C/D	F0006	16	
AIRCRAFT, FIGHTER, F-5, MODEL E	F0005	28	
AIRCRAFT, FIGHTER, F-5, MODEL F	F0005	28	
AIRCRAFT, UTILITY CARGO, C-20G	Fxxxx	6	
AIRCRAFT, UTILITY CARGO, UC-35A	Fxxxx	2	

USMCR
Service Planned Procurments (P-1R Data)

NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurment funds as identified in the P-1R exhibit of the President's budget. Deliveries of procured equipment normally take one to two years before they arrive in the inventory. ***USMCR aircraft are included in the USNR aircraft budget lines, see Table 3, page USNR 3-1.***

NOMENCLATURE	*FY 2001*	*FY 2002*	*FY 2003*	*REMARKS*
AAV7A1 PIP	2,000,000	23,100,000		
LAV PIP	300,000	7,000,000	6,500,000	
JAVELIN		200,000	200,000	
PREDATOR (SRAW)		1,900,000	1,900,000	
GENERAL PURPOSE ELECTRONIC TEST EQUIP.	1,200,000	1,200,000	1,200,000	
COMMON COMPUTER RESOURCES	600,000			
MANEUVER C2 SYSTEMS		700,000		
COMM SWITCHING & CONTROL SYSTEMS	200,000			
AIR OPERATIONS C2 SYSTEMS	600,000	300,000	400,000	
INTELLIGENCE C2 SYSTEMS	1,300,000			
5/4T TRUCK HMMWV (MYP)	12,900,000	13,300,000	13,800,000	
ENVIRONMENTAL CONTROL EQUIP ASSORT	300,000	400,000	400,000	
POWER EQUIPMENT ASSORTED	300,000	200,000	200,000	
TRAINING DEVICES	5,800,000	6,100,000	200,000	
CONTAINER FAMILY	1,000,000	1,200,000	1,300,000	
TOTAL PROCUREMENTS FOR THE USMCR	**26,500,000**	**55,600,000**	**26,100,000**	

Table 4

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 1998*	*FY 1999*	*FY 2000*	*REMARKS*
HELCOPTER, CH-53E	30,000,000			
COMMON END USER COMPUTER EQUIPMENT	2,695,000	2,000,000	2,000,000	
FORKLIFT, COMMERCIAL	259,000			
AIRCRAFT, REPLACEMENT, T-39	10,000,000			
C-20G MISSION ESSENTIAL EQUIPMENT	100,000			
CH-53E HELICOPTER NIGHT VISION SYSTEM	3,495,000			
CONTAINER HANDLER, RT 50K	890,000			
DEHUMIDIFICATION SYSTEM	87,000			
ENGINEER CHANGE PROPOSAL 583, F/A-18A	16,000,000	18,000,000	17,896,533	
EPLRS UNITS	2,989,000			
FORWARD LOOKING INFRA-RED (FLIR) AN/AAS-38	7,275,000			
TOTAL	**73,790,000**	**20,000,000**	**19,896,533**	
** Various Quantities				

USMCR
Projected Equipment Transfer/Withdrawal Quantities

NO DATA AVAILABLE

Table 6

USMCR
FY 1999 Planned vs Actual Procurements and Transfers

This table compares what the Services planned to procure and transfer to the RC in FY 1999 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered in FY 1999.

Nomenclature	*Equip No.*	*FY 99 Transfers*		*FY 99 Procurements*		*FY 99 NGREA*	
		Planned	*Actual*	*Planned*	*Actual*	*Planned*	*Actual*
AIRCRAFT, TRAINING CARGO, CT-39G	F0010					1	2
HELICOPTER, CARGO, CH-53, MODEL E	F0019					2	1
TRUCK, UTIL, ARMD, HMMWV, M1043/M1044	D1159			28	0		

USMCR
Major Item of Equipment Substitution List

NO DATA AVAILABLE

Chapter 4
United States Naval Reserve

I. Navy Overview

a) Overview of Navy-Wide Planning Guidance: The National Military Strategy of the United States provides strategic guidance to engage in and prevail at two nearly simultaneous Major Theater Wars (MTW). Naval forces support national strategic objectives through five fundamental and enduring roles: projection of power from the sea to land, sea control and maritime supremacy, strategic deterrence, strategic sealift, and forward naval presence. Our naval strategy calls for the integration of the Active and Reserve components into a seamless and cohesive Total Force capable of meeting all requirements in peacetime and in war.

The Naval Reserve supports the overall mission of the Navy, which is to "Be prepared to conduct prompt and sustained combat operations at sea in support of U.S. national interests." The mission of the Naval Reserve component, as defined by Title 10, United States Code is to "provide trained units and qualified persons available for active duty in the armed forces, in time of war or national emergency and at such other times as the national security may require.…"

b) Navy-wide Equipping Policy: The Chief of Naval Operations has established policy for equipping the Naval Reserve through promulgation of OPNAV Instruction 4423.5. It is Navy policy that Naval Reserve units will be equipped to accomplish all assigned missions and will have an equipment and distribution program that is balanced, responsive to mission requirements, and sustainable. The priority for distribution of new and combat serviceable equipment, with associated support and test equipment, should be given to units scheduled to be deployed and/or employed first. Equipment priorities for the Ready Reserve units will be established using the same methodology as Regular units having the same mobilization mission or deployment requirements.

The Navy's overriding policy is to establish and maintain a seamless and totally integrated Active duty and Reserve team. Resource sponsors review Naval Reserve mission requirements as part of the Planning, Programming and Budgeting System (PPBS) to identify requirements for new procurement, upgrade or redistribution of existing Navy assets. Redistribution of equipment to meet Naval Reserve requirements typically entails a simple transfer of assets between components. New equipment and upgrade requirements are budgeted for procurement under Active component appropriations. Once approved and appropriated as part of the budget, funds are issued to cognizant contracting commands for procurement.

An important source of funding for Naval Reserve equipment has been the National Guard and Reserve Equipment Appropriation (NGREA), and more recently, congressional adds to Navy procurement programs for Reserve equipment. *Tables 3 and 4* at the end of this narrative provide an overview of both the Navy's Procurement Program for the Naval Reserve (P-1R) and the NGREA. *Chart 1* (Congressional adds to Navy procurement) identifies how congressional adds for Reserve equipment have contributed toward improvement in Naval Reserve readiness.

Chart 1
Congressional Adds to Navy Procurement Programs
For Reserve Equipment
($ in Thousands)

APP	Nomenclature	Equip No.	FY 1998	FY 1999	FY 2000	Remarks
OPN	MIUW Sys Upgrades	MIUW	35,000	8,000	7,000	Upgrades MIUW Systems
APN	Reserve Helicopter	CH-60	30,400	19,000		Procures 3 CH-60s
APN	Upgrades (ECP-560)	F/A-18A	24,000			Upgrades strike capability for USNR aircraft
APN	Upgrades (ECP 583)	F/A-18A			23,600	Upgrades strike capability for USMCR aircraft
APN	Attack Helicopter	AH-1W			5,000	Upgrades
OPN	Computer Based Trng	CBT	3,000	3,000		Develops CBT for Res Acrft
OPN	Littoral Surveillance System	LSS		12,000		Develop and Deploy 1 LSS
OPN	Frigate Upgrade	FFG		5,500		Upgrade 1 FFG Radar Sys
	Total		**92,400**	**47,500**	**35,600**	

c) Navy Plan to Fill Mobilization Requirements: Mobilization plans require Naval Reserve hardware units to deploy with their own weapons platform and/or equipment. Equipment is either maintained at the Reserve activity as both a training and mobilization asset like ships and aircraft, stored at major embarkation ports, or pre-positioned overseas or afloat. Storage at major ports is typical of Civil Engineering Support Equipment (CESE) for Reserve Naval Construction Force (RNCF) and Expeditionary Logistics Force (ELSF) units. The release and shipment of this equipment is dependent on CINC OPLANs.

Other equipment requirements for mobilization, which are not addressed in this report as Reserve component assets, are included in the Navy's War Reserve Materiel Program. War Reserve Materiel requirements are developed by component commanders and prioritized by the Chief of Naval Operations. War Reserve stocks are normally maintained in the supply system as "swing stocks" (i.e., stocks that could be used in any scenario) or positioned in theater to meet employment requirements. War Reserve requirements are considered and approved within the Navy's POM process by appropriate Systems Commands and Resource Sponsors. War Reserve Materiel would be available for both Reserve and Active component requirements.

For equipment or materiel not assigned to the unit and not available in the supply system (War Reserve), the Navy would redistribute assets from other units and/or rely on the procurement and acquisition system to fulfil those requirements.

d) Current Navy Initiatives Affecting RC Equipment: The Navy has several high profile and extensive initiatives that will modernize, improve, or change the operational capabilities of the Naval Reserve. These initiatives are described in more detail later in this section. Major on going initiatives include:

- The C-9 replacement program began in 1997 with the objective of replacing all the Naval Reserve's aging DC-9/C-9B transport aircraft with the C-40A, a variant of the Boeing 737-700.
- The Naval Reserve has two major programs to modernize/upgrade Reserve aircraft. The first, Engineering Change Proposal 560 (ECP-560) will upgrade two Reserve F/A-18A Hornet squadrons to make them compatible with fleet F/A-18s in all facets of the strike fighter mission. The second program is to upgrade all Reserve P-3Cs to the Update III configuration and installation of Anti-Surface Warfare Improvement Program (AIP) capabilities to match fleet P-3C capabilities.
- The Navy's Master Helo Plan is to equip all Navy squadrons, both Active and Reserve, with the H-60 series helicopter by FY 2011. The current Naval Reserve objective is to replace the Naval Reserve's eight aging UH-3Hs with CH-60's. Currently four additional CH-60 aircraft are programmed for FY 2002.
- The Naval Reserve Force (NRF) will replace all Flight I class Guided Missile Frigates (FFG) with Flight III class (H-60 capable) FFGs by FY 2003.
- Revert the USS JOHN F. KENNEDY (CV-67), the Operation Reserve Carrier (ORC) back to the Active Fleet in FY 2007 to meet Navy carrier battle group requirements.
- Modernization of the Mobile Inshore Undersea Warfare (MIUW) surveillance system continues, and the last upgraded system should be delivered in early FY 2001. The Naval Reserve is also developing the Littoral Surveillance System (LSS) for the Navy. Both systems will provide enhanced surveillance and detection capability.

e) Navy Plan to Achieve Full Compatibility between AC and RC: The Navy will continue to manage Total Force equipment inventories to provide the most capable systems to meet mission requirements and minimize the effects of temporary shortfalls and minor incompatibility. Navy policy for horizontal integration stresses interoperability as part of the Total Force concept and makes no distinction between Active and Reserve components. Acquisition and upgrade programs, redistribution from the Active component, and congressional adds for equipment procurement have reduced Naval Reserve compatibility problems with Active and Joint forces.

The Navy will continue the strategy of cascading equipment from Active to Reserve, fund new equipment and modernization requirements in the FYDP, and apply any additional funding provided by Congress toward the modernization of Reserve equipment. As in the past, it is fully expected requirements will outstrip resources. Navy will continue to balance resources with requirements to get the optimum mix of equipment for both Active and Reserve.

II. Naval Reserve Overview

a) Current Status of the Naval Reserve

(1) General Overview: The Naval Reserve is comprised of two basic types of units: hardware units and augmentation units. Depending on the type of unit, equipment availability has a direct impact on training and ability to carry out assigned missions.

Augmentation units provide trained personnel to supplement the manning of existing Active component gaining commands. Augmentation units do not normally have allowances for mobilization equipment. Necessary equipment is assigned to the Active component to support the Selected Reservists (SELRES) that will augment upon mobilization. Some augmentation units have an equipment allowance for training purposes.

Hardware units, which are typically commissioned and analogous to Active units, maintain organic equipment allowances equivalent to active units and are usually capable of independent deployment. Hardware units are heavily dependent on the availability and readiness of their equipment. Equipment allowances for designated Reserve units are normally established by Navy technical sponsors. Where no active counterpart units exist, the Commander, Naval Reserve Force (COMNAVRESFOR), establishes appropriate allowances in conjunction with the Chief of Naval Operations and Systems Commands, which serves as the technical sponsor.

Naval Reserve hardware units were comprised of 28 ships, 37 squadrons and 61 other hardware units in FY 1999. All NRF ships and Naval Reserve Construction Forces have long been under the operational control of CINCLANTFLT and CINCPACFLT. Naval Coastal Warfare units have recently transferred to the operational control of the CINCs. Expeditionary Logistics Support Force units remain under the operational control of Commander, Naval Surface Reserve Force. Commander, Naval Air Reserve, is the Type Commander for all Reserve air squadrons.

(a) Naval Reserve Aviation: The Naval Air Reserve consists of four air wings: Commander, Helicopter Wing Reserve; Commander, Fleet Logistics Support Wing; Commander, Reserve Patrol Wing; and Commander, Carrier Air Wing Reserve Twenty (CVWR-20). The Naval Air Reserve retains most and in some cases all of the mission capabilities of the Navy. The Naval Air Reserve has 100 percent of the Navy's organic medium airlift and adversary training capability. The Naval Air Reserve also has 37 percent of the Navy's Maritime Patrol capabilities and 12 percent of the Navy rotary wing capability.

1. Reserve Carrier Airwing: The Naval Reserve provides one of the Navy's eleven Carrier Air Wings (CVW). The wing is comprised of eight squadrons flying the F/A-18A/B, EA-6B, E-2C, and the Navy's only F-5E/F aircraft. In addition to CVWR-20's mobilization requirements, its squadrons are engaged in thousands of hours of Peacetime Contributory Support (PCS). CVWR-20 provides 100 percent of the Navy's Adversary mission capability, supports counter-narcotic (CN) operations in the Caribbean as well as participating in numerous fleet exercises. The Naval Air Reserve is currently upgrading two squadrons of F/A-18As with current software and avionics (ECP-560) to improve tactical and logistical compatibility with the fleet. The first upgraded Reserve F/A-18 should debut in the summer of FY 2000. The Naval Reserve's only F-14 squadron successfully transitioned to F/A-18As in FY 1999. The newly transitioned F/A-18 squadron will also require the same ECP-560 strike

upgrade for fleet compatibility. A recently surfaced problem for Reserve adversary support is airframe fatigue problems with F-5 aircraft. Because of the importance of the Adversary mission, Navy has tentatively decided to retain and repair these aircraft.

2. Reserve Maritime Patrol Aviation: The Naval Air Reserve provides 37 percent of the Navy's Maritime Patrol capabilities. As part of Navy downsizing, in FY 1999 the Naval Reserve decommissioned one of its two Maritime Patrol Wings and one Maritime Patrol squadron. Additionally, each of the remaining seven squadrons' aircraft allowance was reduced from eight to six aircraft. In FY 2001, the Naval Reserve will begin installation of the eight Update III kits and two AIP kits procured with FY 1997 NGREA funds. Upon installation of these upgrade kits the Reserve Maritime Patrol Wing will have nearly 70 percent of their aircraft in the P-3C Update III configuration. Additional funding is essential to sustain the momentum of the Reserve P-3C AIP and Update III programs and to achieve complete compatibility with Active squadrons.

3. Fleet Air Logistics: The Naval Reserve provides 100 percent of the Navy's organic intra-theater medium and heavy airlift capability. This airlift provides direct logistics support for Fleet CINCs in operating theaters worldwide and airlift support to all military departments in the continental U.S. The Naval Reserve's Fleet Logistics Support Wing is comprised of 14 squadrons and flies C-9, C-20, and C-130 aircraft. The existing C-9 fleet averages over 28 years in age and requires substantial avionics upgrades and new engines to meet noise abatement and navigation requirements. The Director of the Naval Reserve has committed nearly $3.6 million in FY 2000 NGREA funding toward C-9 upgrades. A significant modernization initiative for Naval Reserve airlift capabilities was initiated in FY 1997 when $120 million was appropriated through NGREA for procurement of two C-9 replacement aircraft, the C-40A. The modernization program was continued in FY 1998 and FY 1999 with NGREA providing funding for one additional aircraft in each of those fiscal years. Three additional aircraft have been programmed in the Navy's budget, one aircraft in FY 2000, another in FY 2002, and the third in FY 2005. The new C-40A aircraft is a variant of Boeing's 737-700. The Naval Air Reserve will begin accepting the first of these new aircraft in FY 2001.

4. Reserve Helicopter Wing: The Naval Air Reserve provides six helicopter squadrons to the Navy's rotary wing fleet and represents 12 percent of the total Navy helicopter inventory, 100 percent of the Navy's Helicopter Combat Support Special squadrons, and 40 percent of the Airborne Mine Countermeasures (AMCM) assets. These squadrons support a variety of missions including Search and Rescue, Logistics, Anti-Submarine Warfare, AMCM, and counter narcotics operations. The Reserve helicopter inventory consists of the HH-60H, SH-2G, SH-60F, UH-3H and the MH-53E aircraft. A high priority for the Naval Reserve Force is compliance with the Navy's Helicopter Master Plan which transitions all helicopter squadrons to the Sikorsky H-60 helicopter series. Four of the eight CH-60 helicopters needed to replace the UH-3H were purchased with congressional adds in the FY 1998, FY 1999, and FY 2000 Defense Bills. Two Reserve HSL squadrons, which currently operate the SH-2G, will be decommissioned in FY 2001. The Navy will establish one Reserve HSL Squadron (HSL-60) operating the SH-60B in FY 2001 in Mayport, FL. The Navy will begin transferring 3 SH-60Bs to HSL-60 in FY 2001 with 3 additional aircraft transferred from the Active in FY 2002. It is expected that the Naval Reserve will be an all H-60 force by the year 2008.

(b) Naval Surface Reserve Force

1. Naval Reserve Force Ships: The Naval Reserve Force continued to increase in size and transition to a much more capable force in FY 1999 with the addition of two Coastal Mine Hunter (MHC) ships, the USS CARDINAL (MHC-60) and USS RAVEN (MHC-61). The USS SHRIKE (MHC-62), the last of eleven MHCs, will be transferred to the Naval Reserve in the spring of 2000. The Navy has recently been granted authority to forward deploy 2 MHC ships in Bahrain. To achieve this initiative it will require two Reserve MHC's to be reverted back to the active fleet. The end result will be the Naval Reserve will acquire two fewer MHCs than the originally planned fleet of eleven ships.

The Naval Reserve Force is in the process of transitioning all Flight I class Guided Missile Frigate to Flight IIIs. It is anticipated the transition to an all Flight III FFG NRF will be completed by FY 2003. The SH-2G, a primary weapons system of Flight I class FFGs, will retire from service in FY 2001. This will leave several NRF Flight I FFGs without the capability to conduct their full range of missions. These ships will be assigned missions that will not require the use of their full aviation capabilities. NRF ships regularly deploy to support Navy's operational requirements and relieve the operational tempo of Active ships. In FY 1999, 43 percent of NRF ships deployed for four to six months in support of US maritime interests.

The Reserve carrier, USS JOHN F. KENNEDY (CV-67), became an Operational Reserve Carrier in 1995. Although the JFK's primary mission is to support the training and surge requirements of the U.S. Navy, she deployed to the Mediterranean as a "gap filler" in the FY 1997 and FY 1999 CV/CVN deployment rotation. The JFK regularly participates in routine fleet exercises, carrier qualifications and battle group training. The USS JOHN F. KENNEDY is scheduled to return to the Active force in FY 2001.

The Naval Reserve maintains about 55 percent of the surface mine warfare capabilities of the U.S. Navy. The mine warfare fleet consists of one Mine Control Ship (USS INCHON (MCS 12)), four Avenger Class Mine Countermeasures ships, and ten Osprey Class Coastal Mine Hunter ships. Mine warfare capabilities continued to grow in FY 1999 with the addition of two Coastal Mine Hunter ships bringing the MHC fleet to 10 ships. The Reserve ship, USS INCHON (MCS-12), the Navy's only Mine Control Ship, is the centerpiece of the mine warfare capabilities of the U.S. Navy.

The Naval Reserve surface combatant force continues to remain an active and vital part of the U.S. Navy participating in numerous fleet exercises such as UNITAS, STANAVFORLANT, Great Lakes Cruise 99, CARAT 99, and Caribbean counter-narcotic operations. These ships are a significant operational asset as well as important training platforms for Naval Reservists. Naval Reserve surface combatant force currently consists of 10 Perry Class frigates and 2 Newport Class Tank Landing Ships (LST). Although Naval Reserve FFGs will be reduced from 10 ships to 8 by FY 2000, the remaining ships will have much greater capability as all Flight I NRF FFGs will be replaced by the much more capable Flight III's. Congressional adds to the Navy's FY 1999 procurement programs provided $5.5 million for an upgrade of one Reserve FFG radar system. Reserve FFGs comprise about a third of the Western Hemisphere Group whose primary mission is to support counter drug operations in the Caribbean.

2. Naval Coastal Warfare: The ongoing effort to complete the upgrade of equipment and capabilities of expeditionary Naval Coastal Warfare (NCW) units continues to be a top priority for the Naval Surface Reserve. The Director of the Naval Reserve has committed nearly $2.5 million in NGREA funding toward NCW equipment upgrades in FY 1999 and FY 2000. NCW units provide force protection for fleet units responding to conflicts in littoral areas and supports peacetime contributory commitments of the Navy. Operational control of Naval Coastal Warfare units transferred from Commander, Surface Reserve Force, to CINCLANTFLT and CINCPACFLT in FY 1999.

The Naval Reserve has 15 fully upgraded MIUW systems deployed to the field with the remaining seven due by January 2001. The upgraded MIUW system is in high demand by the CINCs for operational commitments. MIUW units provide 100 percent of the service's capability for shallow water surveillance and detection of high-speed surface craft, subsurface craft and swimmer threats. Congress also provided an additional $7 million to the Navy's FY 2000 budget for the continuation of the MIUW improvement and upgrade program.

In FY 1998, Naval Coastal Warfare forces were identified and tasked to demonstrate the concept of the Littoral Surveillance System (LSS). LSS leverages emerging technologies developed by the U.S. Army and National Intelligence Community coupled with improvements to MIUW capabilities. LSS integrates data from overhead tactical sensors, including aircraft and unmanned aerial vehicles, with MIUW close-in surface waterborne surveillance and shallow underwater surveillance sensor data to provide real-time, integrated surveillance and targeting in support of forces ashore and land attack capable ships.

The LSS program has become so successful that the Navy is planning to transfer Resource Sponsorship from the Expeditionary Warfare Division (N85) to the Surface Warfare Division (N86) and add as much as $224 million to the program over the next three years. The intent of this effort is to leverage the technology from LSS and eventually transfer the technology to surface ships. The Naval Reserve will operate the initial LSS and provide the majority of support for up to four addition units.

The Reserve Explosive Ordnance Disposal (EOD) program provides unique stand-alone capabilities for Active EOD forces in support of expeditionary warfare objectives. Reserve EOD units are trained to supplement EOD missions with unit communications, ordnance clearance, and area search. Mobility is a key element to their success. To enhance mobility, the Naval Reserve seeks to fill Civil Engineering Support Equipment shortfalls, upgrade to reinforced hull inflatable boats, and modernize outboard engines.

Reserve EOD, Mobile Dividing and Salvage (MDSU), and Inshore Boat (IBU) units require portable communications equipment to ensure internal and external Navy communications connectivity, as well as joint connectivity with Marine, Coast Guard and local law enforcement agencies. Support of expeditionary warfare missions and counter-narcotics missions requires a variety of electronics equipment to adequately cover a broad spectrum of communications. The Naval Reserve has committed over $2 million in FY 1999 and FY 2000 NGREA funding toward fulfilling these discrepancies.

(c) Expeditionary Logistics and Construction Forces: The combat support/combat service support units of the Naval Reserve provide a preponderance of on-shore mission capabilities for the CINCs. The Reserve Naval Construction Force provides 60 percent of Navy's combat construction capabilities, while the Expeditionary Logistics Support Force (ELSF) constitutes 97 percent of the Navy's cargo handling, freight expediting, and logistics support for in-theater requirements.

Under the direct operational control of CINCPACFLT and CINCLANTFLT, the Reserve SEABEE force of twelve Naval Reserve Mobile Construction Battalions (RNMCB), six Naval Construction Regiments (NCR), two Construction Battalion Maintenance units (CBMU), and two Construction Force Support units (CFSU) continues to provide integral support for worldwide contingency operations. In addition to their mobilization mission, Reserve CB units provide direct contributory support by working the backlog of maintenance and repair projects at an array of Naval Activities. Reserve Seabees have a severe equipment shortfall in their mobilization packups that support RNMCBs, NCRs and CBMUs. Shortfalls include tactical vehicles, communications gear, construction equipment, and support equipment. FY 1999 and FY 2000 nearly $8.3 million in NGREA funding was provided by the Naval Reserve to alleviate some of the shortfall. However, due to the severity of the shortfall and the declining trend in NGREA funds, more reliance on the direct Navy funding is desired.

The Expeditionary Logistics Support Force (ELSF) continues to be the backbone of the Navy's expeditionary shore-based logistics capability. ELSF units provide a wide range of logistics capabilities to include; on and off loading of ships, operation of air-head and freight forwarding terminals, supply support, and mobile mail centers. To maintain their skills during peacetime, cargo handlers carry out actual off-loads of fleet hospital units, supply ships, and Maritime Preposition Ships (MPS). While ELSF units have adequate equipment to meet mission requirements, their equipment is old and in need of replacement. The most pressing needs of the ELSF include tactical vehicles, material handling equipment, and communications equipment. The Director of the Naval Reserve has applied over $4.1 million in FY 1999 and FY 2000 NGREA funding toward these deficiencies.

(2) Status of Equipment

(a) Major Equipment On Hand: *Table 1* at the end of this narrative section shows major equipment items required by the Naval Reserve to complete assigned missions.

(b) Average Age of Major Equipment Items: As in the Active component much of the equipment in use by the Naval Reserve is of significant age. In many cases the equipment is older than the personnel that operate it. *Table 2* at the end of this narrative section shows the average age of major equipment in the Naval Reserve.

(c) Compatibility of Current Equipment with AC: Achieving complete equipment compatibility between the Active and Reserve components is one of the Director of Naval Reserve's highest priorities. This is reflected in the Naval Reserve Modernization Requirements Program Review 2001 (PF-01) table on page 4-12. Additionally, Navy policy for horizontal integration stresses interoperability as part of the Total Force concept. Navy acquisition and upgrade programs, redistribution from the Active component, and congressionally added funding have done much to alleviate compatibility issues between Active and Reserve.

Aircraft compatibility problems are primarily due to equipment age. Some older Reserve aircraft do not have the most recent modifications found on newer models, and retrofit upgrades can be costly. Examples of Reserve aircraft that have compatibility issues include F/A-18A, P-3Cs, SH-2G and Reserve H-3 helicopters. Reserve F/A-18s lack the capability to fire, launch, and leave air-to-air missiles and deliver the latest precision guided munitions. Not all P-3Cs are Update III configured, and Reserve H-3s need to be replaced due to their advanced age.

The most significant compatibility issue for the NRF is the retirement of the SH-2G helicopter in FY 2001. This will leave Reserve flight I FFGs without their aviation capability. These ships will be assigned missions that do not require use of their full aviation capability.

Other compatibility issues are logistics support and communications equipment. The shear age of some Reserve equipment makes logistics and maintenance support difficult as parts and repair facilities become limited. Naval Expeditionary Forces (CB, ELSF, EOD, MDSU) are experiencing significant shortages of modern communications equipment that inhibit their ability to be fully compatible with Active and Joint forces.

(d) Maintenance and Equipment Readiness: The Naval Reserve shares all of the same readiness and maintenance issues as the Active force. In years past, depot level maintenance was sacrificed to fund other pressing Navy programs. This eventually lead to ships and aircraft, both Active and Reserve, to experience readiness problems and maintenance backlogs. Starting in FY 1998 the Navy started fully funding depot level maintenance and it is expected that depot level maintenance backlog will be eliminated by FY 2001.

(e) Equipment Modernization Shortfalls: As with the Active Navy, the Reserve has a noteworthy list of unfunded equipment modernization requirements. Each year the Director of Naval Reserve develops an unfunded equipment requirement list and forwards it to OPNAV N8 for programming consideration. The Naval Reserve's unfunded requirements are contained in *Chart 3,* Naval Reserve Unfunded Modernization Requirements, at the end of this section.

b) Major Changes Since Last Report: The FY 2000 National Guard and Reserve Equipment Appropriation provided $20 million for miscellaneous equipment and $7 million was provided as direct congressional adds for procurement of Reserve Equipment.

The Navy has added a C-40A procurement line item in the FYDP, making the C-40A transport aircraft a funded program within the Aircraft Procurement-Navy (APN) appropriation.

All Reserve Maritime Patrol Aviation (MPA) squadrons reduced their primary aircraft allowance (PAA) from 8 to 6 aircraft per squadron in FY 2000. In FY 1999, Reserve MPA also decommissioned one P-3C squadron (VP-91) and combined the two MPA Wings into one.

The Naval Reserve will commission a new anti-submarine helicopter squadron (HSL-60) in Mayport, FL. The squadron will receive its first three aircraft in FY 2001, with the remaining 3 aircraft scheduled for delivery in FY 2002.

The Naval Reserve will execute a planned reduction in the NRF as Reserve FFGs will be reduced from 10 to 8 ships in FY 2000. Additionally, the planned FY 2001 transfer of two Flight III FFG to the NRF has been canceled. Flight I FFGs will remain in Naval Reserve service through FY 2003, vice FY 2002.

The USS JOHN F. KENNEDY (CV-67), the Operational Reserve Carrier and two Coastal Mine Hunters (MHC) will revert back to the Active force. The JFK will rejoin the Active carrier deployment schedule and the Navy plans to forward deploy two MHC to Bahrain in late FY 2000.

The Navy is planning to transfer resource sponsorship of the LSSs from the Expeditionary Warfare Division (N85) to Surface Warfare Division (N86) in FY 2000, and add as much as $224 million to the program over the next three years. The intent of this effort is to leverage the technology from LSS and eventually transfer the technology to surface ships.

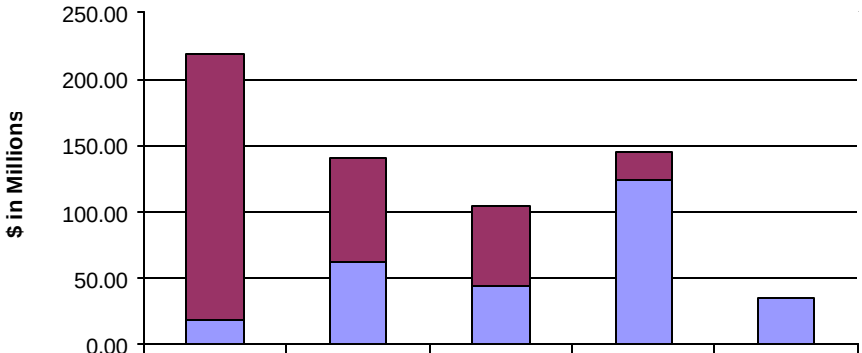
c) Future Years Program (FY 2001- 2003): The Navy has actively sought the fullest integration of Reserve and Active Naval forces under the Total Force concept. This has lead in recent years to the placing of Reserve units under the operational control of the CINCs and the funding of major Reserve equipment acquisitions within the Navy FYDP. In FY 1999, Naval Coastal Warfare units were transferred to the operational control of CINCLANTFLT and CINCPACFLT. Additionally, Navy has placed the C-40A program in the FYDP with the intent of procuring two additional C-40A's between FY 2002 and FY 2005.

The continued integration of Active and Reserve will certainly blur the demarcation lines between these two forces as they become the Total Force of the future. Equipment requirements of the Naval Reserve will continue to be addressed through equipment redistribution from the Active component and procurement of new equipment when required. If the NGREA is eliminated, the Naval Reserve will become more reliant on the regular Navy procurement system to fulfill its future equipment needs.

d) Summary and Conclusion: The Navy and Naval Reserve continue to face the age-old problem of requirements outstripping resources. This problem has become particularly acute in recent years as the Naval Reserve has suffered a significant decline in the procurement of new equipment as shown in *Chart 2* on the following page. The cascading of equipment from the Active component will continue as the Active Navy transitions to more capable platforms. Though cascading remains the primary source of new equipment for the Naval Reserve, new equipment procurement by Navy is also required to maintain desired states of readiness. The Navy will continue to balance its resources, for both Active and Reserve, with future mission requirements, but the balancing act will become increasingly more difficult.

Chart 2

Total Equipment Procurement of the Naval Reserve
FY 1997 – 2001



	FY 97	FY 98	FY 99	FY 00	FY 01
NG&RE Appropriation	199.70	78.70	60.00	20.00	
Service Procurements for RC	18.70	62.20	44.90	124.70	34.80

NOTE: Includes USMCR aircraft procurement, but does not include ammunition.

USNR
Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
MIUW SURVEILLANCE SYSTEM	AN/TSQ-108ASU	5,200,000	22	22	22	22	**22**
AIRCRAFT,TRANSPORT (HERCULES)	C-130T	34,514,000	20	20	20	20	**14**
AIRCRAFT,TRANSPORT (GULFSTREAM)	C-20D	31,595,000	2	2	2	2	**2**
AIRCRAFT,TRANSPORT (GULFSTREAM)	C-20G	38,559,000	4	4	4	4	**4**
AIRCRAFT,TRANSPORT (BOEING 737-700)	C-40A	52,000,000	0	4	5	5	**5**
AIRCRAFT,TRANSPORT (SKYTRAIN)	C-9B	27,587,000	15	15	15	15	**15**
HELICOPTER,COMBAT (SEAHAWK)	CH-60	15,246,000	0	4	8	8	**8**
SHIP,AIRCRAFT CARRIER (KENNEDY CLASS)	CV	2,541,585,145	0	0	0	0	**0**
AIRCRAFT,TRANSPORT (SKYTRAIN)	DC-9	18,136,000	12	8	7	7	**7**
AIRCRAFT,EARLY WARNING (HAWKEYE)	E-2C	79,333,000	8	8	8	8	**8**
AIRCRAFT,EARLY WARNING (PROWLER)	EA-6B	64,143,000	4	4	4	4	**4**
AIRCRAFT,PATROL (ORION)	EP-3J	28,929,000	1	0	0	0	**0**
AIRCRAFT,FIGHTER/ATTACK,F/A-18A (HORNET)	F/A-18A	43,296,000	45	45	45	45	**46**
AIRCRAFT,FIGHTER/ATTACK,F/A-18B (HORNET)	F/A-18B	43,296,000	2	2	2	2	**2**
AIRCRAFT,FIGHTER,F-5E (FREEDOM FIGHTER)	F-5E	8,081,000	20	20	20	20	**19**
AIRCRAFT,FIGHTER,F-5F (FREEDOM FIGHTER)	F-5F	11,834,000	3	3	3	3	**3**
FRIGATE,GUIDED MISSILE (PERRY CLASS)	FFG	313,483,449	8	8	8	8	**8**
HELICOPTER,COMBAT SEARCH/RESCUE (SEAHAWK)	HH-60H	18,835,000	17	17	17	17	**18**
BOAT,INSHORE,LIGHT	IBL	2,059,602	6	6	6	6	**6**
CRAFT,LANDING,MEDIUM (NSW)	LCM	1,157,627	11	11	11	11	**11**
CRAFT,LANDING,UTILITY	LCU	6,673,864	2	2	2	2	**2**
LITTORAL SURVEILLANCE SYSTEM	LSS	25,000,000	1	1	1	1	**1**
SHIP,LANDING SHIP TANK (NEWPORT CLASS)	LST	168,222,698	2	2	2	2	**2**
MOBILE ASHORE SUPPORT TERMINAL	MAST	1,339,000	6	6	6	6	**6**
TROOP CARRIER,ARMORED,MINI (NSW)	MATC	504,299	11	11	11	11	**11**
SHIP,MINE COUNTERMEASURES (AVENGER CLASS)	MCM	149,702,358	4	4	4	4	**4**
SHIP,MINE COUNTERMEASURES,COMMAND (INCHON)	MCS	414,288,043	1	1	1	1	**1**
HELICOPTER,MINEWAR,MH-53E (SUPER STALLION)	MH-53E	32,489,000	8	8	8	8	**8**
SHIP,MINE HUNTER,COASTAL (OSPREY CLASS)	MHC	146,144,277	11	11	11	11	**11**
BOAT, SWATH	MHS	1,500,000	1	1	1	1	**1**
AIRCRAFT,PATROL,P-3C (ORION)	P-3C	57,305,000	42	42	42	42	**42**
BOAT,PATROL,LIGHT (SBU)	PBL	107,886	7	7	7	7	**7**
BOAT,PATROL,RIVERINE (NSW)	PBR	238,888	25	25	25	25	**25**
CONSTRUCTION BAT MAINT UNIT MOB PACKUP	RCBMU	13,900,000	0	0	0	0	**2**
NAVAL CONSTRUCTION FOR SUP UNIT MOB PACKUP	RNCFSU	48,500,000	0	0	0	0	**2**
NAVAL MOBILE CONSTRUCTION BAT MOB PACKUP	RNMCB	36,090,000	6	6	6	7	**12**
HELICOPTER,ASW,FRIGATE (SEASPRITE)	SH-2G	22,522,000	12	0	0	0	**0**
HELICOPTER,ASW,CARRIER (SEA KING)	SH-3H	11,743,000	0	0	0	0	**0**
HELICOPTER,ASW,FRIGATE (SEAHAWK)	SH-60B	28,122,000	3	6	6	6	**6**
HELICOPTER,ASW,CARRIER (SEAHAWK)	SH-60F	20,166,000	4	4	4	4	**4**
AIRCRAFT,TRANSPORT (KINGAIR)	UC-12B	3,509,000	7	7	7	7	**5**
HELICOPTER,COMBAT,SAR	UH-3H	9,673,000	8	4	0	0	**0**
TRK CARG HMMWV 2MAN	36062	58,000	7	7	7	7	**204**
TRK CARG 5T MTVR	58861	160,000	0	0	0	0	**146**

USNR
Average Age of Equipment

NOTE: This table provides the average age of selected major items of equipment. Since equipment is normally procured over several years, the average age provides a projected average age of the fleet for budget year (BY) 2001.

NOMENCLATURE	*EQUIP No.*	*AVERAGE AGE*	*REMARKS*
FRIGATE GUIDED MISSILE	FFG	19	All Reserve FFGs to be Flight III class by FY 2003
LANDING SHIP TANK	LST	29	
OPERATIONAL RESERVE CARRIER	ORC	31	Returned to Active Fleet in FY 2000
MINE HUNTER COASTAL	MHC	4	
MINE COUNTERMEASURES	MCM	11	
MINE COUNTERMEASURES COMMAND	MCS	30	
ELECTRONIC COUNTERMEASURES (PROWLER)	EA-6B	22	
FIGHTER (FREEDOM FIGHTER)	F-5	25	Includes F-5E and F-5F
FIGHTER/ATTACK (HORNET)	F/A-18	13	Includes F/A-18A and F/A-18B
PATROL (ORION)	P-3C	17	
HELICOPTER, ASW (SEASPRITE)	SH-2G	8	Will retire from service in FY 2001
HELICOPTER, ASW (SEA KING)	H-3H	35	Incudes UH-3H and SH-3H
HELICOPTER, MINE WARFARE (SUPER STALLION)	MH-53E	5	
HELICOPTER, CSAR (SEAHAWK)	HH-60H	7	
HELICOPTER, ASW (SEAHAWK)	SH-60F	9	
TRANSPORT (SKYTRAIN)	C-9B	12	Remanufactured aircraft. Actual Age is 28 years
TRANSPORT (SKYTRAIN)	C-9	28	C-40A will begin replacing C-9 in FY 2001
TRANSPORT (GULFSTREAM)	C-20D	12	
TRANSPORT (GULFSTREAM)	C-20G	4	
TRANSPORT (KINGAIR)	UC-12B	18	
TRANSPORT (HERCULES)	C-130T	5	
EARLY WARNING (HAWKEYE)	E-2C	16	
ELECTRONIC COUNTERMEASURES (ORION)	EP-3J	33	Will retire from service in FY 2000

USNR
Service Planned Procurments (P-1R Data)

NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurment funds as identified in the P-1R exhibit of the President's budget. Deliveries of procured equipment normally take one to two years before they arrive in the inventory. ***USMCR aircraft are included in the aircraft lines below*** .

NOMENCLATURE	*FY 2001*	*FY 2002*	*FY 2003*	*REMARKS*
C-40A		57,300,000		
F-18 SERIES	26,200,000	11,700,000	12,000,000	
H-46 SERIES	200,000	200000	200000	
H-53 SERIES	1,200,000		6,600,000	
H-3 SERIES	*			
C-130 SERIES	2,000,000	1,900,000	300,000	
CARGO/TRANSPORT A/C SERIES	1,100,000	1,329,000	416,000	
DIVING AND SALVAGE EQUIPMENT	100,000	100,000	100,000	
SONOBUOYS - ALL TYPES	3,700,000	3,400,000	3,000,000	
GENERAL PURPOSE TRUCKS		700,000	700,000	
CONSTRUCTION & MAINTENANCE EQUIP	100,000	200,000	200,000	
TACTICAL VEHICLES			3,300,000	
ITEMS UNDER $5 MILLION	100,000	200,000	200,000	
MATERIALS HANDLING EQUIPMENT	100,000	700,000	1,900,000	
TOTAL PROCUREMENTS FOR THE USNR	**34,800,000**	**77,729,000**	**28,916,000**	
* ITEMS UNDER $50,000				

Table 4

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 1998*	*FY 1999*	*FY 2000*	*REMARKS*
Aircraft, Transport,C-40A	45,000,000	44,000,000		C-9 Replacement (Boeing 737-700 Variant)
CESE TOA	2,500,000			
CESE Update, 2.5 ton Truck SLEP	5,000,000			
GSE F/A-18	1,000,000			
Helicopter Upgrades	1,500,000			
Naval Coastal Warfare	25,000,000	1,423,000	7,000,000	MIUW/LSS Program Upgrades and Support Equip
Expeditionary Warfare Forces		8,577,000		CESE, Comm Equip, Support Equip for CB, CHB
F/A-18A Upgrades (ECP -560)		6,000,000		Strike Capability Upgrade
Infrastructure Info Technology Support			5,896,533	Naval WAN Infrastructure Upgrades
EA-6B USQ-113 Pods & Band receivers			2,500,000	
P-3C Trainer Upgrade			920,000	
C-9 Transport Aircraft Mods			3,580,000	FAA/ICAO required upgrades
Total US Naval Reserve	**80,000,000**	**60,000,000**	**19,896,533**	

USNR
Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

NOMENCLATURE	*EQUIP No.*	*FY 2001 QTY*	*FY 2002 QTY*	*FY 2003 QTY*	*REMARKS*
Aircraft, Transport	DC-9	4	1	1	Replaced by C-40A
Aircraft, Patrol (Orion)	EP-3J	1			Drawdown in force
Firgate, Guided Missile	FFG		2	3	Flight III FFG to replace Flight I FFG
Helicopter, ASW, Frigate	SH-2G	12			Planned withdrawl/retirement
Ship, Aircraft Carrier	OSR	1			Reverts back to Active
Helicopter, Combat, SAR	UH-3H		4	4	Replaced by CH-60

USNR
FY 1999 Planned vs Actual Procurements and Transfers

This table compares what the Services planned to procure and transfer to the RC in FY 1999 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered in FY 1999.

Nomenclature	*Equip No.*	*FY 99 Transfers*		*FY 99 Procurements*		*FY 99 NGREA*	
		Planned	*Actual*	*Planned*	*Actual*	*Planned*	*Actual*
AIRCRAFT,FIGHTER/ATTACK,F/A-18A (HORNET)	F/A-18A	10	10				
BOAT,INSHORE,LIGHT	IBL					8	8
SHIP,MINE HUNTER,COASTAL (OSPREY CLASS)	MHC	2	2				
RADIO,VHF,TACTICAL,SABER-1 (CB)	AN/PRC-126					55	55
RADIO,HF (MIUW)	AN/PRC-138					40	40
VAN,MIUW SURVEILLANCE	AN/TSQ-108A-SU			6	6		
SENSOR STRING,ACOUSTIC,PASSIVE	AS-P			16	3		
SENSOR PLATFORM,MOBILE	MSP			6	6		
SENSOR PLATFORM,PORTABLE	PSP-ANTENNA/TLR			6	6		
LOADER,AIRCRAFT,AT,463L(ELSF,CHB)	1820-10					4	4
CBR,CHEMICAL MONITOR	XX-CBR					180	180

USNR
Major Item of Equipment Substitution List

NOTE: This table identifies equipment authorized by the Service to be used as a substitute for a primary item of equipment. The table also identifies whether or not the item is able to be deployed in wartime. This data meets the Title 10 requirement to identify equipment that is not the most desired item of equipment.

Required Item Nomenclature	*Required Item Equip No.*	*Substitute Item Nomenclature*	*Substitute Item Equip No.*	*FY 2001 QTY*	*Deployable Yes*	*No*
AIRCRAFT,TRANSPORT (BOEING 737-700)	C-40A	AIRCRAFT, TRANSPORT (SKYTRAIN)	DC-9	12	X	
MIUW SURVEILLANCE SYSTEM	AN/TSQ-108ASU	MIUW SURVEILLANCE SYSTEM	AN/TSQ-108A	3	X	
TRK CARG HMMWV 2MAN	36062	TRK, CARGO, CUCV 1.25T	0360-31	91	X	
TRK CARG 5T MTVR	58861	TRK, CARGO, 2.5T	0539-01	85	X	
HELICOPTER,COMBAT (KNIGHTHAWK)	CH-60	HELICOPTER,COMBAT,SAR	UH-3H	8	X	

Chapter 5
United States Air Force Reserve Components

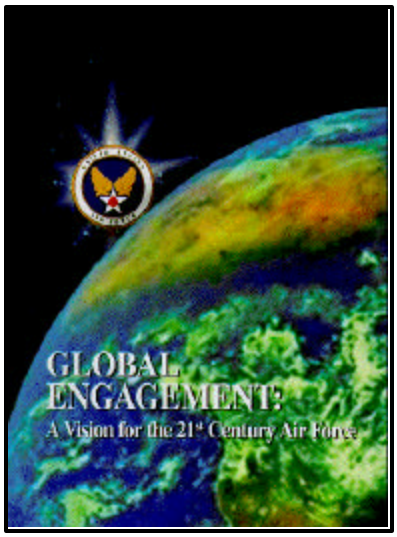
I. United States Air Force Overview

a) Overall Air Force-wide Planning Guidance: The President, through the National Security Council, prepares the nation's security vision through the National Security Strategy of the United States by outlining its national security interests and objectives. The current strategy is called *A National Strategy for a New Century*. Through this strategy the US military is asked to prepare for the following objectives:

- Enhance Security. Prepare for a capability to respond to challenges short of war and in conjunction with allies, to win two overlapping major theater wars (MTWs).
- Promote Prosperity at Home. Enhance American competitiveness and press for open and equal US access to foreign markets.
- Promote Democracy. Increase security by protecting and preserving democratic processes in emerging states.

To achieve the above national security objectives, the Joint Chiefs of Staff developed a broad strategy, documented in the *National Military Strategy of the United States of America*, for the military services to "Shape, Respond, and Prepare Now" to account for the evolving changes in the strategic environment.

Based on the strategies laid out, the Air Force (AF) prepared a document called *Global Engagement: A Vision for the 21st Century Air Force* to prescribe an understanding of what air and space power mean to the nation. This vision addresses the entire Air Force, including the Air Reserve Component (ARC) which is comprised of Air National Guard (ANG) and Air Force Reserve (AFR) units. Within this "Total Force" concept, the roles and missions of the ARC are mirror images of the Active Air Force. In August 1998, to provide better integration of forces and as a response to changing world security, the AF introduced the Expeditionary Air Force (EAF) concept. The EAF will organizationally link geographically separated units into standing Aerospace Expeditionary Forces (AEFs). These AEF units would launch from AF installations and be ready to fight or deliver humanitarian supplies on very short notice. In his speech to Congress, Mr. F. Whitten Peters, as Acting Secretary of the Air Force, said, "The use of AEFs will allow us to cut Op Tempo [Operations Tempo]…and because widespread use of AEFs will allow us to better integrate the Air National Guard and Air Force Reserve into our contingency deployments, giving us additional capability from our existing Reserve and Guard units". [sic]



Ten AEF packages are being developed from the air and space resources and manpower from the Total Air Force. AEF units will serve on a 15-month rotation cycle with 90-day vulnerability windows for deployments. During each vulnerability window, two AEFs will be available for short notice taskings and/or scheduled forward presence missions. The objective is to increase predictability and stability in the lives of airmen. These forces will be light, lean, lethal forces that exploit the speed, range, flexibility, and responsiveness of aerospace power.

The EAF provides a full spectrum of capabilities that can be tailored to meet the requirements of the geographic Commanders-in-Chief (CINC).

ARC personnel regularly rotate with active component personnel to Central America, Europe, the Balkans, Middle East, and Southwest Asia in support of AF operations. In 1999, ARC members contributed to the AF's mission worldwide.

Chart 1 below shows the training exercises and operational missions in which the AFR and ANG participated.

Vermont ANG F-16A

Chart 1

Training Exercises and Operational Missions

Training Exercises	Operational Missions
GLOBAL POWER	JOINT FORGE
FOAL EAGLE	SOUTHERN WATCH
COMBAT ARCHER	CORONET OAK
GLOBAL GUARDIAN	NATO AWACS
KEEN SWORD	KEFLAVIK ALERT
GUNSMOKE	NORTHERN WATCH
DACT	ALLIED FORCE
AIR WARRIOR	SHINING HOPE
GREEN FLAG	DELIBERATE FORGE
COPE THUNDER	OPBAT-COUNTER DRUG SUPT
BATTLE GRIFFIN	NOBIL ANVIL
ULCHI FOCUS LENS	PHOENIX SCORPION III & IV
SENTRY EAGLE	HURRICANES MITCH, GEORGE, and FLOYD
ACES SOUTH	
TANDEM THRUST	DESERT FOX
SUSTAIN HOPE	

In 1999, AFR units flew over 4,800 missions involving over 26,300 sorties. The AFR missions include search and rescue, storm tracking, aerial spray, air medical evacuation, and space shuttle operation support.

In parallel with the traditional roles, AFR personnel have deployed all over the globe in support of several contingencies such as Northern Watch, Southern Watch, Desert Fox, Phoenix Scorpion III and IV, Phoenix Duke I and II, Noble Anvil, and Allied Force. In addition, Reserve units provided humanitarian support for Operation SHINING HOPE and in the aftermath of Hurricanes George, Mitch, and Floyd.

Likewise, the ANG supported over 36 training exercises and 26 operational missions including support for Bosnia and Kosovo activities, Operations NORTHERN WATCH and SOUTHERN WATCH, Coronet Nighthawk, Iceland Alert, Keflavik Rescue, Masawa Alert, Operation SHINING HOPE, Operation DEEP FREEZE, and Operation ICE CAP. In addition, two aircraft and 65 personnel deployed to Indonesia for 60 days to fight fires in Sumatra.

The following charts provide a brief synopsis highlighting some ARC support provided for real world contingencies and operations in FY 1999.

Chart 2
Air Reserve Component Provides

Weather Reconnaissance	100%
DoD Airborne Fire Fighting Support to the U.S. Forestry Service	100%
Aerial Spraying	100%
Strategic Interceptor Force	100%
Air Control and Warning	100%
Aeromedical Evacuation	87%
Tactical Airlift	66%
Air Refueling Tankers	51%
Strategic Airlift	50%
Service's Fighter Strength	38%
Bomber Strength	16%

Chart 3
Air Force Reserve Provides

WC-130 Weather Reconnaissance Force	100%
Aerial Spraying Capability	100%
HH-60 Range and Shuttle Support	100%
Total Medical Crew Capability	70%
MC-130 Combat Talon 1 Capability	62%
C-141, C-5 and C-17 Airlift Missions	45%
KC-10 Air Refueling	45%
Air Force Space Command's Weather and Navigation Missions	20%
B-52 Bomber Force	14%

Chart 4

Air National Guard (ANG) Provides

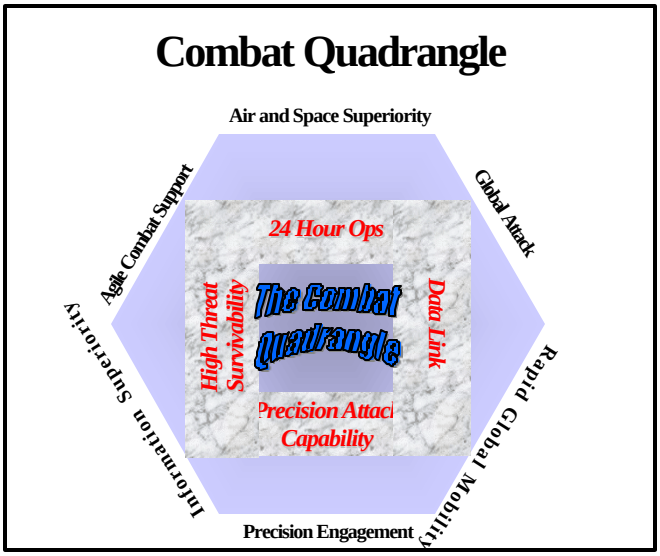
Penetrating Manned Tactical Reconnaissance (additional capability in certain F-16 squadrons)	100%
Airborne Psyop Broadcasts (with the EC-130 COMMANDO SOLO Mission)	100%
Command and Control and Ski Landing Missions (for the National Science Foundation in Support of the U.S. Antarctic Program)	100%
Low-Profile SIGINT Airborne Collection (with the SENIOR SCOUT Mission)	100%
Mobile Missile Warning for Space Command	100%
Continental United States Air Defense	100%
Observation/Surveillance Capability (new mission) (with OC-130 KEEN SAGE Aircraft)	67%
KC-135 Air Refueling Tanker Capability	41%
Air Force Total Fighter Capability (A-10, F-16, & F-15)	36%
Rescue C-130 and Helicopter Capability	33%
CONUS Real-time Imagery Exploitation and Dissemination	33%

b) Air Force-wide Equipping Policy: Air Force Requirements Development Process. Recent Congressional hearings on readiness increased interest in the areas of Total Force compatibility, interoperability, and readiness issues. The ARC uses a bottom-up requirements review process. Unit representatives meet annually at the Weapons and Tactics Conference and Air Force Reserve Combat Planning Council where requirements for their weapon systems are advocated. These requirements are then forwarded to the Reserve component staffs where validation occurs, and finally on to the Air Staff where they compete for funding with existing AF requirements. Typically, the ARC acquires equipment in three ways:

- Equipment transferred from the Active component to the Reserve component
- Air Force plans, programs, and budgets for the procurement of weapon system for the ARC, and/or
- A single year procurement appropriation provided by Congress for the National Guard & Reserve Equipment Appropriation (NGREA) (Appropriation 0350).

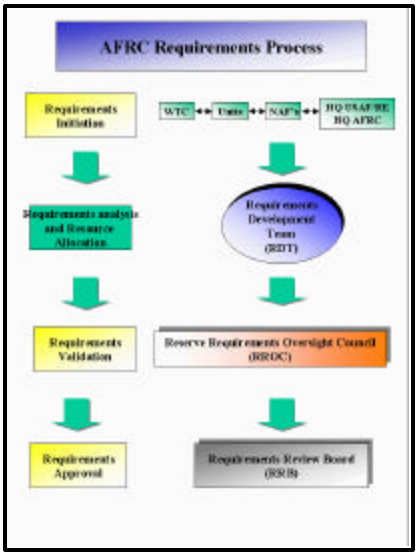
Depending on the urgency of the requirement and fiscal constraints for the year, one of the above efforts may be more effective than another. Regardless of the funding solution available, it is critical that funding continue to match the ARC's increased roles and responsibilities as part of the Total Force. The DoD Total Force Policy mandates that AF, ANG, and AFR personnel work seamlessly to achieve the objectives embodied in the National Military Strategy of the United States.

While the list of desired new weapon systems and modifications to existing platforms continues to increase, the ARC remains in a fiscally constrained environment with no near term solution. An Office of Management and Budget report shows procurement funding decreasing by 37 percent between FY 1985 and FY 2002. The Reserve components recognized the need to formalize their procurement process to better fit with the Active component's planning, programming, and budgeting process. Modeled after the six AF core competencies, the ARC developed a simple and effective communication tool for use in defining ARC combat requirements. This tool is referred to as the Combat Quadrangle (CQ). The CQ consists of four core elements required by the current warfighting CINCs.



When in a combatant CINC's theater of operation, the Active and Reserve component forces must have the capability to:

- Employ precision strike
- Employ 24-hour operations
- Employ and survive in a complex threat environment
- Employ with information dominance capability.



The ARC identifies and sorts requirements in each of the core elements and then prioritizes their relative value to the overall ARC mission. The top requirements are submitted to the AF and major commands to compete against other AF requirements for inclusion into the Program Objective Memorandum (POM) process.

In addition to the above equipping procedures, the AFR has formalized an internal biannual requirements review and validation process. Requirements are initiated at the unit level, which are then filtered and prioritized by the Numbered AF through the Combat Planning Councils. In this case, requirement proposals, including aircraft modifications at any level of the command, are submitted to the applicable AFR functional areas. Proposals that receive lead command concurrence, but are not funded, may be considered for AFR funding. A team of action officers makes up the Requirement Development Team (RDT) which evaluates each requirement. The RDT analyzes requirements for concept of employment, sustainment, and resource allocation. The Reserve Requirements

Oversight Council (RROC) then validates these requirements at AFR Headquarters. The RROC approves three priority lists: procurement, engineering, and studies & analysis. The RROC presents its recommendations to the Reserve Requirements Review Board, the approval authority for command requirements, funding and execution which is chaired by the Chief of Air Force Reserve. These requirements are then submitted through the Active component counterpart for incorporation into the POM build.

c) Service Plan to Fill Mobilization Shortages in the RC: The ARC continues to work with the AF, DoD, and Congress to modernize and equip its fighting force to "fly, fight, and win." Funding modernization equipment remains a top priority for the ARC. AF program funding supplemented by NGREA funding is critical to ARC modernization. Several programs initiated in FY 1999 have gained momentum and will begin fielding in the upcoming years. All ARC future modernization requirements must be prioritized in the AF budget (and placed above the funding line) to ensure future Total Force commitments can be met. This is critical to the success of the ARC and the Total Force.

The criteria for providing the necessary resources to the ARC parallels the Service's total requirement to support the two-MTW scenario, meet peacetime operating requirements, affordability, and policy. The AFR and the ANG maintain readiness for deployment across all units and do not use a tiered resourcing methodology as used by other Services. These ARC resources will be deployed within the soon-to-be-implemented EAF concept. In this concept, AF resources (both Active and Reserve components) are evenly distributed into ten AEFs. These AEFs are pools of resources from which assets will be deployed on a rotating basis.

Specific decisions in addressing shortfalls in the ARC result primarily from the Planning, Programming and Budgeting System process as influenced by the National Security Strategy, National Military Strategy, and the Defense Planning Guidance, as well as the comprehensive results of internal Service support assessments and war games. Specific Service criteria is based on such elements as force structure, mission assignments, Joint Exercises, end strength, training requirements (skill-level proficiencies), unit conversions, and transition costs.

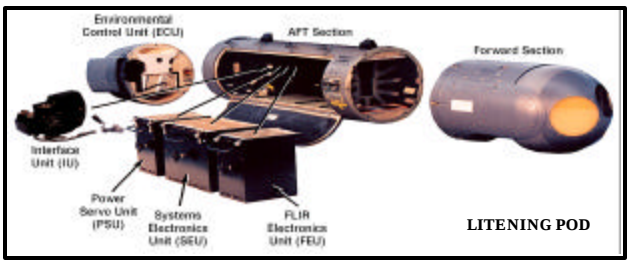
The bottom line is that the ARC is well supported by the Active Air Force. Although there are unfunded requirements and unresolved equipment needs, there is not a significant shortfall within the ARC. The resourcing concept of the Reserve components with equipment, facilities, and personnel is to maintain a balance with the AC, and together forge a seamlessly integrated Total Force capable of performing both wartime and peacetime missions.

d) Current Service Initiatives Affecting RC Equipment: In support of the AEF, both ARC and Active component airmen and their equipment must be ready and fully compatible when provided to the warfighting CINC. To ensure there is no loss in warfighting capability, the ARC is committed to modernizing their equipment. The NGREA is a specific modernization appropriation provided as a Congressional add that offers a timely means of procuring new weapons systems or upgrading current ARC platforms. The NGREA is directly responsible for the ARC's success in staying ahead of the threat, meeting warfighting CINC taskings, and sustaining 24-hour operations. The NGREA has allowed procurement of a Precision Strike

capability, a Datalink capability, a Countermeasures Management System (CMS) capability, a Night Vision capability and other essential products to meet EAF requirements.

Modernization initiatives affecting RC equipment include:

F-16 Aircraft



Precision Attack Targeting System (PATS): PATS is the ANG's number one modernization priority. PATS will use the Litening II Targeting Pod, which is "plug and play" on the F-16 Block 30. It has two level maintenance support, an infrared (IR) and electro-optical operating capability, a laser spot tracker, and significant additional performance improvements and technological enhancements. The ARC will eventually equip all Block 25/30 general purpose units with 8 pods apiece. The first pods to the ANG are scheduled in March 2000.

Through a joint effort between the Active Air Force and AFR, the PATS program is also in full swing for the AFR. The AFR's F-16 Block 30 fleet will enjoy the new capability of precision strike technology. PATS was AFR's number one operational priority and will be the platform for lessons learned for the A-10 program.

Combat Upgrade Plan Integration Details (CUPID): CUPID combines four F-16 Block 25/30/32 modifications (GPS, CMS, SADL, and NVIS) into one modification speed-line resulting in a Combat Air Forces (CAF) Block 30 fleet common configuration. The CUPID modification includes:

Global Positioning System (GPS): This program installs an integrated GPS/INS (Inertial Navigation System) solution into F-16 block 25/30/32 aircraft. Reducing the reliance on conventional navigation systems, this modification will provide the ability to deliver GPS-aided munitions, specifically Joint Direct Attack Munitions (JDAM) and the Joint Stand Off Weapon. The supporting software improvement is programmed in Software Configuration Upgrade-4 to be installed in September 2000.

Countermeasure Management System (CMS): This modification replaces the individual electronic combat cockpit control units for the ALR-69 radar warning receivers, electronic countermeasure pods, and ALE–40 chaff/flare dispenser systems with a single control panel.

Night Vision Imaging System (NVIS): F-16 interior and exterior lighting is being modified to be compatible with the operational use of Night Vision Goggles (NVGs), allowing full mission employment in both air-to-air and air-to-ground scenarios. The lighting design integrates the compatible lighting external to the instruments and controls in the cockpit. Exterior aircraft lighting allows for both covert and overt operating modes using filters.

Situation Awareness Data Link (SADL): SADL is a low cost data link that uses the Enhanced Position Location Reporting System (EPLRS) radios to prevent fratricide and enhance situational awareness, while providing accurate combat identification capability. This system is secure, jam resistant and has a low probability of intercept. It provides fighter-to-fighter, fighter-to-ground, and ground-to-fighter connectivity.

High Speed Anti-Radiation Missile (HARM) Targeting System (HTS): HTS is designed for the Suppression of Enemy Air Defenses mission. The 169FW, McEntire, SC, will receive the equipment, training, and funding required to employ their Block 52 aircraft with full HTS capability.

Theater Airborne Reconnaissance System (TARS): Five ANG units (Richmond, Selfridge, Terre Haute, Andrews, and Sioux City) will be equipped with 4 TARS pods and 1 ground station to perform the tactical reconnaissance mission.

F-16 with HARM Missiles

Improved Data Modem (IDM): The IDM is being implemented on the ANG Block 40/42 fleet, the IDM brings combat ID and battlefield critical information inside the cockpits in a secure, non-voice mode. Integrated with other current data transfer modes, IDM will allow enhanced situation awareness and wartime viability in the "data intensive, no voice" scenario for the Block 40/42 fleet. IDM installations begin in FY 2001.

Towed Radio Frequency (RF) Decoys: Towed decoys are important in our ability to protect fighters from RF guided missiles. The ALE-50 RF towed decoy is currently fielding on F-16 Block 40/50. The AF has developed a modification to the ALQ-184 electronic countermeasures (ECM) to add ALE-50 capability for F-16 Block 30 contingency use. The pod mounted ALE-50 can be moved between aircraft and units to ensure the most important front line fighters are protected from RF guided missiles. The ARC is working with Air Combat Command (ACC) to ensure that this capability is funded for additional production and is looking at concepts to add this capability to the ALQ-131.

F-16 Pylon Integrated Dispensing System (PIDS) Universal: The ANG and AFR must have both increased infrared missile countermeasures and precision weapons on their F-16s. In 1994 and 1995 the ANG and AFR purchased 310 F-16 PIDS for increased countermeasures on F-16 C/D Block 25/30s. PIDS is a standard weapons pylon modified to add three countermeasure dispensers. Now PIDS requires Mil-Std-1760 precision weapons capability. In support of this requirement, the F-16 program office is beginning a development program with the F-16 European Participating Nations (Belgium, Norway, Netherlands and Denmark) called the PIDS Universal to integrate Mil-Std-1760 capability into PIDS. The PIDS Universal configuration will also include some growth provision for adding a missile warning system in the

future. The ACC, with ANG and AFR support, is addressing funding to modify 610 pylons to the PIDS Universal configuration.

A-10 Aircraft

A-10

Embedded GPS/INS: Currently in installation, this modification will improve navigation accuracy, reliability and maintainability. The current INS (the LN39) will be replaced with a ring laser gyro and a GPS. Mean time between failure (MTBF) is increased from 126 to 6000 hours and accuracy is improved from .6NM/hr to 5m CEP. Installations will continue through FY 2001.

Integrated Flight and Fire Control Computer: The current aircraft computer has reached its throughput and memory limits. A replacement is necessary to continue future avionics improvement modifications. A standardized, commercial-off-the-shelf (COTS) processor/interface will allow future improvements to be integrated via software changes only.

Airborne Data Recorder: The A-10 is projected to be in service for another 29 years. The current flight loads data recorder will be procured to ensure accurate flight loads management to extend the airframe life. MTBF will be extended from 245 to 4000 hours.

1760 Bus Integration: This program includes replacing the Armament Control Panel - a high failure item - with a digital Stores Management System and incorporating a multi-function display (MFD). This capability will allow future integration of smart/wind corrected munitions, as well as the JDAM and AIM-9X. The 1760 Bus program is being procured by the AFR with follow-on installations being funded by ACC. Other spin-off improvements include upgrades to increase the flexibility of munitions carriage on all eleven wing hardpoints.

Situation Awareness Data Link: SADL is a low cost data link using the EPLRS radios to prevent fratricide and enhance situational awareness while providing accurate combat ID capability. The system is secure, jam resistant, and has a low probability of intercept. It provides aircraft-to-aircraft, aircraft-to-ground, and ground-to-aircraft data link and combat ID capability which takes advantage of the developing Army and Marine Corps digitized battlefield.

The AFR has used its NGREA to provide both the F-16 and A-10 fleets with SADL. The procurement of EPLRS radios and Group-A wiring for the A-10 started in FY 1997 and is complete. The AFR F-16 program is progressing with its SADL procurement effort and is expected to be completed in October 2000.

Countermeasure Management System: CMS replaces individual electronic combat (EC) cockpit control units for the ALR-69 radar warning receiver, ECM pods, and the ALE-40 chaff/flare dispenser system, with a single control panel. The CMS modification increases aircraft survivability by centralizing these control functions, modernizing the chaff/flare

dispenser system, and having NVG-compatible displays. In addition to the above capabilities, the ALQ-213 lays the foundation for an integrated electronic combat suite that will one day optimize the overall EC response to the specific threat scenario at hand.

Installations of AFR A-10 CMS are progressing on schedule. All Reserve A-10 aircraft will be modified at Barksdale AFB. Aircraft from AFR Fighter Wings, 442nd FW, Whiteman AFB, 917th Barksdale, and 926th FW New Orleans will be modified by October 2000.

F-15 Aircraft

Fighter Data Link (FDL): The FDL program is the key to future effective combat employment for the F-15. The need to tie together off-board and on-board sensors and to synthesize the resulting data into a clear picture of the entire engagement is invaluable to the F-15 pilot operating under the Combat Identification (CID) Rules of Engagement found in every theater of operation. "First look-first shoot" tactics are valid for both the F-15 and F-22 and require a robust CID capability. Operational tests and exercises consistently provide clear evidence that the FDL increases the kill ratio for the F-15 many times over the current capability, ensuring the F-15's lethality well into the 21st century. The AF began purchase of the FDL for the Active component F-15s in FY 1998. To ensure total force compatibility within the AEF, the ANG has also begun purchases of the FDL.

Fighter Data Link

Night Vision Imaging System: The NVIS Lighting Program modifies F-15 interior and exterior lighting to be compatible with the operational use of NVG. With this modified lighting, F-15s will be able to operate in the full range of air-to-air mission scenarios. The NVIS kit cockpit lighting provides NVG compatible lighting external to the instruments and controls in the cockpit. The exterior lighting includes a covert lighting mode and filtering to make the normal aircraft lights NVG friendly.

All Fighters

Helmet Mounted Display System (HMDS): The AFR, partnered with the ANG, is exploring opportunities to study and test COTS HMDS for potential integration into its fighter fleet. This HMDS will integrate existing fighter MFDs, sensors, and night vision capability. It will be lightweight, have potentially lower cockpit mapping costs, and meet all ARC requirements for airworthiness in a fast jet.

Helmet Mounted Display System

B-1 Aircraft

Beyond Line-Of-Sight (BLOS): This system provides BLOS data link communications for the B-1. The Active Air Force is currently testing a system.

Color Airborne Video Tape Recorder (CAVTR): The CAVTR system records aircraft information via a high-resolution color camera thus providing accurate, full mission recording capability. An inexpensive but viable system was tested on a 184th BW bomber. ACC submitted a modification proposal to depot who forwarded it to Boeing. The first response from Boeing was too expensive. However, they are looking for alternatives.

B-1

Additional Weapons Modules: The two ANG B-1 units do not have sufficient numbers of 28-carry weapon stores. The ANG, in coordination with the two units, is determining the required number of modules to fulfill their needs. Air Systems Center at Wright-Patterson AFB is working with Boeing to determine a manufacturing cost and plan.

Night Vision Goggles: The ANG is currently procuring 4949G model NVG to complement the on-going aircraft NVIS program. This procurement is critical to filling the "24-Hour Operations" requirement set forth by warfighting CINCs. The NVGs are allocated to rescue, fighter, and NVIS modified C-130 aircraft, respectively. However, support equipment continues to be a concern. This program is on-going as money becomes available.

AFR has been procuring NVGs since FY 1996 as a multi-year procurement effort. NVGs are critical to aircrews in virtually all of AFR 's combat platforms. NVGs have been procured for HC-130s, HH-60G rescue helicopters, C-130s, A-10s, F-16s, and B-52s.

KC-135 Aircraft

KC-135 Refueling a C-5

Pacer Compass, Radar and Global Positioning System (CRAG): This program improves reliability and maintainability, enhances mission capability, and reduces cockpit workload for the KC-135 aircrew. Associated PACER CRAG block upgrade modifications include a Traffic Collision Avoidance System (TCAS), Ground Collision Avoidance System, High Reliability Maintenance Free Battery, Inter-phone Replacement, the Selective Call Program, and Reduced Vertical Separation Minimum.

KC-135E Engine Reliability, Maintainability, and Availability (RM&A) Improvements: Affordable alternatives for upgrading the engine RM&A of the KC-135E fleet are currently being studied to meet expanding operational and environmental requirements. Options include upgrading components of current engines, installing new engines, and installing government furnished equipment engines.

KC-X Aircraft: A Tanker Replacement Team comprised of ANG, AFR, Air Mobility Command, and HQ AF personnel has been formed to expedite the introduction of a new dual mission (refuel/cargo) tanker into the USAF. The Replacement Team is focusing initial efforts on writing the Mission Needs Statement and Operational Requirements Document.

C-5 Aircraft

Engine Upgrade: The reliability of the C-5, in particular the A-Model, is a top concern. The C-5 will receive an upgraded TF-39 Engine High-Pressure Turbine to increase reliability and maintainability and increase turbine hot section life.

Communication, Navigation, Self-Protection, and other Improvements: A new Flight Management System and a GPS, VHF 8.33 Radio, plus the Selective Call Program are planned system improvements. The Airlift Defensive Systems will provide a common self-protection capability against portable IR Surface-to-Air Missile threats. The TCAS is being planned for future installation as part of the follow-on C-5 Avionics Modernization Program (AMP). A study is currently funded to determine a future engine replacement program along with structural upgrades.

C-141 Aircraft

Service Life Extension Modifications: Air Mobility Command (AMC) identified a core of 63 ARC C-141C aircraft that will remain in the inventory through FY 2006. They will remain an integral part of the strategic airlift forces until the C-17 is fully fielded. The core 63 aircraft, which include both ANG and AFR aircraft, are currently receiving four concurrent modifications required to keep them flying until the C-17 transition is complete. The modifications include the All Weather Flight Controls System, the GPS Enhanced Navigation System, the Fuel Quantity Indicating System, and the Defensive Systems package providing missile warning and countermeasures dispensing. Two additional safety modifications also being initiated for the C-141, include the Traffic Alert & Collision Avoidance System and the Terrain Avoidance Warning System.

C-141

C-130X

Phase I - Avionics Modernization Program: This Program will produce a baseline avionics configuration across the current C-130 fleet. AMC, in coordination with ACC, AFR, Air Force Special Operations Command, and the ANG, is undertaking the C-130 AMP to consolidate all E, H1, H2, and H3 aircraft into one configuration. The goal is to consolidate existing and projected aircraft modification programs in order to upgrade and standardize the aging C-130 fleet.

Phase II - Structural Engines and Environmental Improvements: Phase II is designed to bring all C-130 variants to the same basic aircraft systems configuration to increase reliability, maintainability and supportability, and performance. Phase II will compliment the standardization effort of Phase I. All C-130s will be equipped with the systems now present on C-130H aircraft. The upgrades would provide T56-A-15 engines, increased capacity flight deck air-conditioner, Auxiliary Power Units, and improved hydraulics.

C-26 Aircraft

Forward Looking Infra-Red (FLIR): The C-26 Westinghouse WF-360 FLIR camera is being replaced with a Westcam 'Skyball". This program is 20 percent complete with two aircraft to receive installations and six aircraft to receive upgrades. Completion is expected in FY 2000. This upgrade also includes a sensor controller operating system upgrade, touch-screen technology, emergency battery backup, Wulfsburg AM/FM/HF/VHF/UHF radios, and fire detection/suppression for the FLIR pod.

Electro-Optical Photographic Cameras: A program is under way to augment the "wet film" capability of the C-26 with a digital camera. This technology will allow digital pictures to be taken and printed onboard the C-26, thus saving days of wet film processing time and allowing law enforcement agents to leave the aircraft with hard copies of imagery data.

HH-60 Aircraft

Helicopter Upgrades: A new Altitude Hover and Hold System will provide greater stability during critical rescue mission hover maneuvers. Additionally, the 701C Engine Retrofit and Improved Flight Controls Program replaces existing engines and improves flight control systems. The HH-60's performance is significantly degraded by the additional aircraft weight from various aircraft upgrades. The new engines have 20 percent more power providing for a greater margin for safety on hot days or at high altitude.

HH-60

Flight Engineer Seat Safety Modification: Effort is underway for AFR to replace the current flight engineer seat with an energy absorbing crashworthy seat that will fully articulate, move fore and aft, rotate 360 degrees, and have the five point gunner's restraint harness.

HC-130 Aircraft

Rescue System Upgrades: A low cost NVIS Compatible Lighting System modification is in the contract phase for the Combat Air Force (CAF) rescue fleet. A Personnel Locator System will be installed on Kulis, AK, and Moffet, CA, aircraft. This system will give rescuers bearing, range, and authentication information on downed aircrew equipped with the PRC-112.

HC-130 Electronic Warfare (EW) Management System (EWMS): AFR HC-130 aircraft are especially vulnerable to threats in the electromagnetic environment, both IR and RF. The nature of the evolving threat drives continuous focus on upgrades. The EWMS effort undertaken by AFR will link all EW assets and provide integration and management of threat displays and responses.

HC-130

WC-130J Procurement: The AF's primary Weather Reconnaissance Squadron is operated by AFR at Keesler AFB, MS. Currently flying ten C-130H aircraft, the squadron is programmed to replace their C-130H's with new WC-130J aircraft over the next two years. Nine replacement WC-130J's, which were authorized by Congress between FY 1996-FY 1998, were contracted. The tenth aircraft was included in the FY 1999 Defense budget and is also to be contracted.

Four of the WC-130J model aircraft have been delivered to the AFR and are now located at Keesler AFB, MS.

e) Service Plan to Achieve Full Compatibility between AC and RC: ARC units' combat readiness and mobilization are regularly evaluated in accordance with the Air Force Inspection system. Operational Readiness Inspections (ORIs) are accomplished by gaining major commands every four years. The inspections system measures the units' ability to mobilize and deploy, as well as combat readiness. Medical units (previously evaluated by the Air Force Inspection Agency) have now been included in ORIs to ensure they meet their wartime taskings. Guard and Reserve units meet the same standards and criteria required of Active component units. Based on the outcome of these inspections, the AF evaluates numerous issues, including compatibility, and makes appropriate decisions on providing the ARC with necessary equipment and resources.

When compared to the Active fleet, the ARC generally has older equipment with less capability in the areas of precision strike, combat ID, 24-hour operations, and high threat survivability. Current programs funded by NGREA and the AF (as addressed in Sections I.d, II

and III) will solve many of these issues with non-developmental solutions. The situations discussed below are worthy of attention for both the ARC and Active AF.

Precision Strike Capability: The majority of ARC F-16 units continue to be excluded from contingency and combat operations requiring precision strike capability. The answer to this shortfall is the PATS targeting pod program. This program is critically underfunded, and, until funding is increased, the ARC will continue to be excluded from vital combat and combat support operations. For example, the ANG had three block 25/30 F-16 units scheduled for a rotation into Southwest Asia during January – March 1999; however, these units were removed from the rotation because they lacked precision strike capability. These block 25/30 F-16's have the required software but not the required PATS pod to execute the mission. PATS remains the number one modernization priority for the ANG.

F-16 A/B Aircraft: The F-16 A/B is a 20+ year old aircraft and is a serious interoperable roadblock for the ANG. The F-16 A/B is at the end of its design life, and the internal components do not match AF F-16 components inventoried at AF logistics centers. This results in an uncommon logistics trail causing delays, costs, and inefficiency within the theater. Replacement of the F-16 A/B fleet is a top priority of the Air Staff.

F-16

Ground Tactical Unit Operations: A mission of the Tactical Air Control Party (TACP) is to provide critical air-to-ground links between the fighter aircraft and the ground forces commander. These air-to-ground links increase aircraft survivability and reduce fratricide. Currently, there are no plans for the Active forces to field SADL radios with TACP units throughout the combat AF, even though SADL (as an off-the-shelf technical solution) is ideally suited to perform the TACP function and increase situational awareness of both the ground forward air controllers (G-FAC) and mission pilots. ACC's position on equipping TACP units (G-FACs) with the needed capability is to wait for the development and fielding of a Joint Tactical Radio System (JTRS). The JTRS is a concept programmable radio system that will operate from the 1.5 MHz to 2 GHz spectrum. JTRS will be capable of receiving both SADL and LINK-16 data. The present funding line for JTRS is to begin in FY 2003 with fielding to follow in FY 2005 and beyond. The ANG is working on a concept to prove the feasibility of incorporating a SADL radio into the present TACP radio pallet (GRC-206v5).

Intelligence: As the AF continues to modernize and cascade older generation equipment to the ARC, there is a concern that the lack of modernization funds to distribute to all combat units will result in a diminishing return of quality compatible equipment for the ARC. Today the Senior Scout platform is a text book example. This system was transferred to the ANG to provide training opportunities for a Utah ANG unit and to continue support for Counter Drug operations. The unit has multiple taskings to participate with the EC-135 Rivet Joint (RJ) aircraft flights. Without modernization funds, Senior Scout became less and less compatible with the RJ aircraft in the operator interfaces, the datalinks, and mission upload processes. Although some funds have been mandated for continued operations, lack of sufficient funds to

upgrade the equipment may result in an insufficient capability to continue to be useful in fulfilling its mission.

In unit intelligence programs, the ANG and AFR have received the Combat Intelligence System (CIS) in common with the Active units. However, the delivery schedule slipped to the point where the Active units received third generation CIS computers before the ARC completed its first generation system delivery. Those machines were subsequently found not to be year 2000 compliant and are now being replaced with a personal computer-based system provided by the major commands. These machines will be compatible with the force level Tactical Battle Management Communication System. Additionally, communications connectivity to classified internet circuits was not programmed for the ANG resulting in a workaround dial-up modem solution continuing for several years. To date, only four of 60+ ACC-gained ANG units have direct connections to the classified internet, while all Active units have been connected for years.

Electronic Warfare: The Air Force lacks self-protection solutions compatible with ARC aircraft. For example, on F-16 aircraft, the Air Force has only been able to fund hardware integration of towed decoys and missile warning for Block 40/50 aircraft. Therefore, ARC aircraft, which are mainly Block 30s, do not have the same survivability potential as the more modern Active component block 40/50 aircraft. The AF needs self-protection solutions that are compatible with multiple aircraft. ARC philosophy is that self protection solutions should be pod or pylon based so that they can be shared between AEFs.

Medical Equipment: The ANG medical and aeromedical evacuation (AE) war reserve materiel (WRM) is programmed and managed by the Air Force Medical Service (AFMS). ANG medical WRM is generally stored locally and can be utilized for training (AE squadrons only) and for its intended purpose. However, during the past three fiscal years, the AFMS received only 47 percent of their validated medical WRM required funds. The lack of adequate medical WRM funds has severely degraded the AE Guardsman's ability to train with the equipment they will eventually deploy with upon activation. All ten ANG AE squadrons are now seeking to purchase the much-needed training equipment using local ANG Operations and Maintenance funds.

The ANG medical non-WRM equipment includes items for training and home station care. With the exception of the medical x-ray system, all medical equipment is purchased utilizing O&M funds. In FY 1999, the ANG funded $2 million for base procured medical equipment, which accounted for 85 percent of the validated requirement. However, AE only received $100 thousand of the available $2 million. The need to replace aging non-WRM medical equipment is more critical as the requirement for training equipment is increasing and O&M funds become more limited.

Training Systems

Training Equipment: The combat readiness of ARC aircrews is dependent on current and future training devices. All aircrews within specific weapon systems train to the same requirements and standards ensuring total force readiness. However, the ARC must also focus

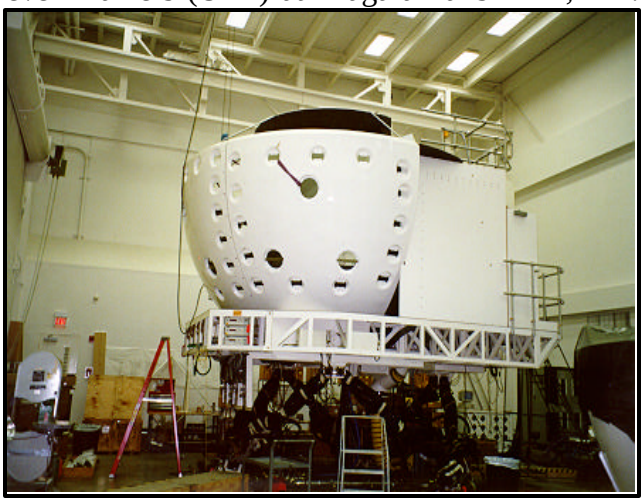
on the unique training needs of the individual Reservist and Guardsman, their location, employment, and weapon system, in order to provide quality training.

A training strategy for the ANG led to establishing regional trainers for multi-engine aircrews, unit level trainers to meet the continuation training needs for tactical fighter aircrews, and rangeless air combat training systems (formerly Air Combat Maneuvering Instrumentation) which are useable in any of the ANG backyard ranges. The AFR has concentrated on developing some of the most creative training options by using existing technology. This, when combined with low-cost, available resources, delivers unit training devices and multi-task trainers that allow crewmen to significantly strengthen their air proficiency.

The ARC's primary training occurs using actual equipment with which units deploy, and secondary training with simulators, trainers, and debriefing equipment. Continual increases in the costs of using actual equipment and advances in simulation technology will drive the use of secondary training sources.

Ground Based Training: The Active AF generally procures training systems based on one simulator per Active wing or base (typically an organization of three or more squadrons). Since ARC units are generally organized with a single squadron per base, elaborate motion simulators are not always cost effective to procure and operate. Recognizing this, the ANG and AFR instituted a training concept designed to provide home unit training through Regional Training Centers (RTC).

In summer 1998, the AFR took the lead in providing C-130 H2 and H3 training to aircrews with fielding of the C-130 H3 Unit Level Trainers (ULT) at Niagara Falls ARB, NY. This was the culmination of a streamlined and quick-to-the-fight acquisition approach where C-130H trainers were built and tested in an AF laboratory environment resulting in a well-defined, effective, and low-cost ULT. The ULT completed the certification process and became operational in the winter of 1998. In addition, the C-130 community now enjoys robust and vigorous C-130H model training within a newly established 3-bay, C-130 simulator facility at Dobbins Air Reserve Base, GA, at the Eastern Regional Flight Simulator Facility. This is the primary training facility for all C-130 H2 and H3 training. The Active AF has used this facility as a model for its training program.



C-130 H-3 Full Motion Weapon System Trainer

Airborne Training: There are three Air Combat Training Systems (ACTS) currently fielded at Combat Readiness Training Centers (CRTC) in Gulfport, MS, Alpena, MI, and Volk Field, WI. The CAF is actively pursuing GPS based technology. ACTS allows aircrews to conduct instrumented air combat training in their respective backyard range. With GPS,

aircrews and aircraft are no longer tethered to instrumented ranges with relay towers, but can fly and train in any airspace they desire and return home to a three-dimensional, computer-based mission debriefing, with unprecedented accuracy.

Simulators

Unit Training Devices (UTDs): In cases where training must be accomplished at the unit level, but sufficient equipment is not available and new procurement for such elaborate devices is too costly, the ARC has developed UTDs which incorporate core training requirements. These core training requirements include air-to-air, air-to-ground training (including radar navigation and deliveries), emergency procedures, high fidelity instrument procedures (including night operations), and EW. Pilots can fly over real world terrain and familiarize themselves with potential areas of conflict (i.e., mission rehearsal). In anticipation of future training requirements, the UTDs are being designed with growth potential for Distributive Mission Training (DMT). These UTDs are very capable, motionless simulators that provide a cost-effective means of training aircrews for combat and contingency operations. The acquisition philosophy for these devices include procuring a large amount of COTS equipment and Non-Developmental Items, thus allowing low cost and high fidelity training systems at an affordable price.

Technology advances now permit low-cost trainer capabilities equivalent to traditional simulators at greatly reduced costs for both acquisition and support. In fact, the reduction in support costs alone justifies replacement of older simulators. The success of this low cost approach is evidenced by the proliferation of the F-16 UTD. This trainer is operational and is being used in 56 F-16C ANG, ACC, and Air Education and Training Command (AETC) units. The AFR has been the front runner in fielding high fidelity trainers in cooperation with the Air Force Research Lab at Mesa, AZ, for the A-10 UTD. This high fidelity, unit level device's success has led to active duty participation in development of an A/OA-10 UTD. Because of the tremendous cost savings and success that has been realized with this new realm of trainers, ULTs are being investigated for larger aircraft, such as the C-130 and B-1.

C-5 Simulator: Through the use of the National Guard and Reserve Equipment Appropriation, AFR is near complete in the procurement of a C-5 Simulator as the primary trainer to meet the Reserve strategic airlift role. This simulator will be certified by the Federal Aviation Administration and once completed will be delivered to the 433rd AW, Kelly AFB, TX.

Full Mission Trainers (FMTs): In an effort to achieve commonality within the Active F-15 fleet, the ANG has purchased six FMTs, in addition to the 26 FMTs being purchased for ACC and AETC. Similar in size and functionality to the UTD, the FMT provides training in instrument and emergency procedures, with additional tactical training capability not found in the UTD. Additionally, these FMTs are capable of DMT with other DMT players.

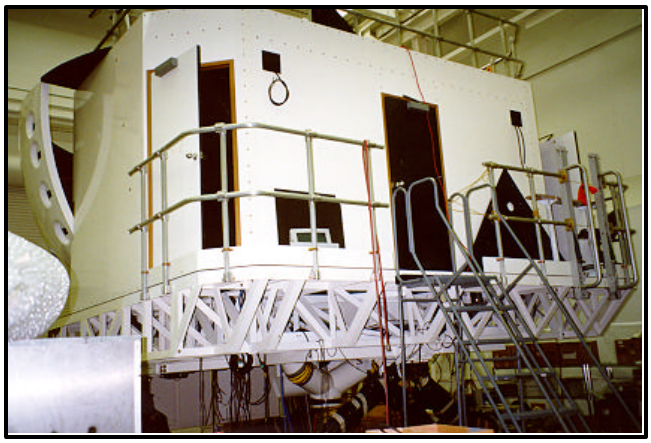
Weapon System Trainer (WST): WSTs are currently employed at ARC regional training centers and are used to train aircrews from multiple units. The regional training approach reduces cost, but requires aircrews to travel away from their home unit for training. The large travel costs involved prevent sending some members of the crew for training, which has a

negative impact on crew resource management. However, regional training centers are currently still the most cost-effective approach to meeting ARC training requirements.

Two C-130 RTCs, utilizing the C-130 WST, provide training for ARC units. The first center, operated by the ANG at the Minneapolis-St. Paul International Airport (IAP), became operational in 1993. This center serves co-located Guard and Reserve C-130 units, as well as all units in the north and northwest United States.

For the second C-130 RTC, the ANG and AFR procured both C-130H2 and C-130H3 simulators, located at Dobbins AFB, GA, which were delivered in April and November 1999, respectively. Both systems are the first ever to have the current configurations of the aircraft being flown.

The ANG operates a KC-135R RTC at Meridian, MS. Additional centers are being planned for Pease ANGB, NH; Milwaukee IAP, WI; and March AFB, CA.



C-130 Weapon System Trainer

During FY 1999 the ANG plans to establish a C-141 RTC at Memphis, TN. This center, intended for both Active and ARC crews, will house the first flat screen C-141 cockpit trainer.

The AFR has a C-5A simulator at Westover ARB, MA. A step above the current Active component program, this simulator has a unique visual capability to train both air refueling and conventional air-land mission procedures. Additionally, the ANG has established a simulator at Stewart IAP, NY. These simulators will pay for themselves in just a few years through logistics savings and extended aircraft life.

Computer Based Training (CBT): RTCs will be augmented by CBT at all ANG and AFR units, including KC-135 units. The CBT program of the ARC is the lead effort for AF programs of the future. Currently, KC-135E aircrews lack regional or unit level trainers and must rely on the American Airlines Training Center in Dallas, TX.

Multi-Task Trainer (MTT): The F-16 MTT Program was developed jointly by the AFR, AF Research Laboratory and the ACC's Training Systems Center. Five MTTs have been fielded and are fully operational. They serve as primary simulation trainers providing basic cockpit and emergency procedures.

The A-10 MTTs, based on the F-16 MTTs concept, have been the workhorse trainers for AFR

Reserve A-10 MTT

A-10 fighters. Two A-10 MTTs have been recently delivered to the 47th FW at Barksdale AFB, LA.

Air-to Air and Air-to-Ground Combat Training Range Enhancements

F-15 with AKITS air instrumentation pod

Alpena Kadena Interim Training System (AKITS): AKITS is a GPS-based air combat training system which provides the Alpena, MI, CRTC with a state-of-the-art air instrumentation and mission debriefing system. AKITS will allow the Range Training Officer to monitor live time-space-position information data from participating aircraft and communicate through three UHF (Have Quick capable) radios to all players within Line-of-Sight of the Alpena CRTC. This system also allows aircrews to record all mission data (including missile shots and target kills) and replay this data through a three-dimensional computer displayed debriefing. AKITS is currently carried by ANG F-16s and F-15s at Alpena, MI. The ANG is planning to robust this interim system with additional equipment which will allow AKITS air instrumentation pods to be carried on aircraft not equipped with a 1553 bus (for example, A/OA-10s).

Joint Tactical Combat Training System (JTCTS): JTCTS is a GPS-based, encrypted ACTS which will allow ANG aircraft to train in backyard ranges with Navy, as well as other Air Force aircraft. This is a joint program between the Navy (lead service) and the Air Force. JTCTS will allow aircrews to train anywhere in realistic combat conditions using tactics associated with the Advanced Medium Range Air-to-Air Missile. This system also includes UHF/VHF Real-Time Kill Notification, No-Drop Weapons Scoring, and a capability for 100 plus "real-time" aircraft participants (F-18, F-14, F-16, F-15). The Alpena CRTC will be one of the first AF locations to receive JTCTS. The Full Operational Capability will include 36 air instrumentation pods, three debriefing stations, and a live monitor capability. Future JTCTS capabilities will allow for exercise integration of surface and subsurface naval vessels to ensure total force and composite training between the Air Force and Navy.

Unmanned Threat Emitter (UMTE): To provide more realistic training to combat aircrews, the ANG currently owns a small complement of UMTE systems located at the Volk Field, WI, CRTC. This system generates target tracking and missile guidance RF signals that illuminate an aircraft and energize that particular aircraft's Radar Warning Receiver. These RF signals are programmed to act and react like the real world (red) ground-to-air threats that aircrews might encounter during combat and contingency operations. Current efforts are underway to upgrade the UMTE and to maintain it as a viable threat emitter, while continued technological advances allow for improvements to real world threats.

Mobile Threat Emitter System (MoTES): Unique to the ANG, MoTES is similar to the UMTE system; however, the threat emitter is located on a platform to allow rapid movement

from one location to another. Since several units are located in close proximity to the CRTC ranges and use them on a weekly basis, a mobile platform is necessary to ensure that threat locations can change from day-to-day, as necessary, to prevent training from becoming routine. Two MoTES are operational at the Gulfport, MS, CRTC. Current efforts are also underway to upgrade MoTES in order to maintain it as a viable threat emitter, while continued technological advances allow for improvements to real world threats.

Distributive Mission Training: DMT will be a component of the Joint Synthetic Battlespace. It will provide a shared training environment comprised of live, virtual, and constructive simulations. DMT allows warfighters to train affordably and realistically, individually or collectively in the AF's core competencies (Air and Space Superiority, Global Attack, Rapid Global Mobility, Precision Engagement, Information Superiority, and Agile Combat Support). DMT will simulate a full range of tasks to include complex, high intensity aerial warfare for the basic AF fighting unit, and provide unconstrained training for all tasks that cannot be accomplished in actual flight training without extraordinary cost or risk. The system will allow warfighters to practice or conduct simulated real-world missions by networking multiple simulators and other training devices with live aircraft. DMT will realistically simulate underlying environmental factors and processes such as weather, terrain, infrastructure, navigation, and command and control. To support the exercise of engagement-level decision making, DMT will credibly represent all applicable Air Force Manual 1-1 missions. Current AF DMT efforts include a DMT "first-look" utilizing F-15C FMTs located at Eglin AFB, FL, and Langley AFB, VA. This will connect them to an E-3 AWACS simulator at Tinker AFB, OK, to create a DMT air-to-air engagement exercise. The ARC is actively participating in all DMT planning conferences and meetings to ensure DMT remains a total force training philosophy.

II. Air National Guard (ANG) Overview

a) Current Status of the ANG: The mission of the National Guard, first and foremost, is to be prepared as a member of this nation's military team to fight and win. The ANG must be able to meet its state and federal obligations at a moment's notice. The ANG currently has about 1170 aircraft supporting all facets of DoD, government and state missions. These aircraft are tasked to accomplish missions in support of combat taskings, Special Operations, Rescue, Airborne Firefighting Support to the U.S. Forestry Service, Counter-narcotics, Flying Training, Operational Test and Evaluation, etc. Filling its Aerospace Expeditionary Force (AEF) obligations is the ANG's number one priority and its equipping philosophy continues to center around fulfilling the warfighting Commanders-in-Chief (CINC) requirements via the Combat Quadrangle (CQ). The tenants of this quadrangle include: Precision Attack, 24-hour Operations, Information Dominance, and Survival in a high-threat environment.

(1) General Overview: The National Guard and Reserve Equipment Appropriation (NGREA) continues to be the lifeblood of the ANG in procuring modernization equipment that is lacking in the Air Force (AF) inventory but is critical to ANG mission accomplishment. Lack of some critical warfighting capabilities in the ANG's fighter aircraft precluded their direct participation in Kosovo operations; however, missions involving the air refueling and airlift fleets were directly supported. At the present time, 68 of 95 ANG flying units are AEF tasked. Future AEF participation will be directly related to the capability to modernize ANG equipment to fit package requirements. Without these major upgrades, ANG participation will be significantly diminished.

(2) Status of Equipment: The following paragraphs synopsize the Major Items of Equipment (MIE) within the ANG and the ongoing efforts to upgrade and modernize the force.

(a) Equipment On-hand

1. Fighter/Attack/Bomber Aircraft

F-16 Aircraft: The ANG has over one third of all Combat Air Forces (CAF) F-16 aircraft. These aircraft range from the older F-16A model to the more capable F-16, Block 52.

F-16A

Block 25/30: The majority of ANG F-16 aircraft is the Block 25/30 aircraft type. This block of aircraft is receiving Global Positioning System (GPS), Countermeasure Management System (CMS), Night Vision Imaging System (NVIS), and Situation Awareness Data Link (SADL) as part of the trend setting Combat Upgrade Plan Integration Details (CUPID) program. These aircraft will see a dramatically increased combat capability with CUPID and with the recently acquired targeting pod (Litening II) from the Precision Attack

Targeting System (PATS) program. CUPID is funded through NGREA and AF program funding. PATS began as a NGREA only project but has received funding assistance from AF plus ups. The ANG is currently attempting to add PATS to the FY 2001 budget. When fielding is complete, the Block 25/30 aircraft equipped with PATS and CUPID will be as capable as any other F-16 in the AF inventory. The Block 30 fleet will be capable of employing GPS aided munitions sometime in the FY 2003 timeframe.

Block 40/42: The Block 40/42 aircraft are currently equipped with several targeting pods (precision strike) and already have GPS navigation capability. The Block 40/42 fleet will receive GPS aided munitions capability in FY 2001. The Common Configuration Improvement Program (CCIP) will field Link 16 data link, color displays, AIM 9X capability and a variety of other programs beginning in FY 2004. In the interim, the ANG is funding the AF standard Improved Data Modem with NGREA and AF funding assistance. Again, programmed improvements will keep ANG aircraft AEF ready.

Block 50/52: The Block 50/52 fleet will receive CCIP beginning in FY 2001. The ANG will reach Initial Operational Capability (IOC) with the High Speed Anti-Radiation Missile (HARM) Targeting System (HTS) in approximately one year. This is a crucial combat capability in high demand by all warfighting CINCs.

A/OA-10 Close Air Support Aircraft: The ANG accounts for 30 percent of the CAF A-10 inventory. All A-10 units are currently equipped with Night Vision Goggles (NVG) and NVG compatible lighting. The A-10 will soon be equipped with a new fire control computer, cockpit displays, and aircraft software to allow the A-10 to support SADL, GPS Aided Munitions (precision strike), and the PATS pod. This program will also include CMS and GPS for increased survivability and greater navigation accuracy. This program should begin in FY 2001 and will be structured similar to the current F-16 CUPID program. Funding for this program will be a combination of NGREA and AF program dollars.

A-10

F-15 A/B Aircraft: The ANG has 100 percent of the CAF F-15 A/B fleet. These aircraft are tasked for the Air Superiority and Continental Air Defense mission. These aircraft will be equipped with the Fighter Data Link (FDL) beginning in FY 2000. This will give ANG F-15 aircraft state-of-the-art combat identification (CID) capability and common employment capability with the active fleet. FDL is being funded with a combination of NGREA and AF program dollars. All units are currently equipped with NVGs and will soon field an NVIS cockpit lighting modification. This modification is low cost and will be completed at the unit level. Several classified electronic combat enhancements are in the work for the F-15 as well.

ANG F-15A

B-1 Bomber Aircraft: There are currently no ANG initiatives to enhance the precision ordnance capability on the B-1. However, the Active AF is including ANG B-1 aircraft in all its planned upgrades including precision ordnance. B-1 Multi-Carry Weapons Modules, allowing a 28 bomb weapons mix, are critically short AF-wide. A beyond-line-of-sight capability for data link is also a top priority, but a particular system has not been identified. Both ANG B-1 units have been supplied with NVGs and night vision lighting is being considered for a future upgrade. Defensive system upgrades are programmed into the next three AF upgrades, and the ANG now has an approved B-1 cockpit Video Tape Recording (VTR) system.

2. Air Refueling Aircraft

KC-135 Tanker: The ANG's Air-refueling/tanker force represents 37 percent of the total force refueling aircraft. Tankers extend the range of airlift and combat aircraft by enabling these planes to be refueled in flight. The ANG is working a Pacer Compass, Radar and Global Positioning System upgrade program for the KC-135 fleet.

KC-135R

KC-135E Engine Reliability, Maintainability and Availability (RM&A) Improvement: Initiatives are underway to improve the engine RM&A of KC-135E aircraft. Options being studied include upgrading components of current engines, installing new engines, and installing GFE engines.

KC-X Air Refueling Aircraft: The ANG has begun initial work with Air Material Command to identify requirements for a replacement aircraft (dubbed the KC-X) for the current aging air-refueling fleet.

3. Airlift Aircraft

C-5 Aircraft: The ANG's C-5As comprise over 10 percent of the entire C-5 heavy airlift fleet. The reliability of the A-Model continues to be a concern and upgraded TF-39 Engine High-Pressure Turbines are programmed to increase reliability/maintainability and increase engine turbine life. Upgraded communication, navigation, self-protection, and other improvements are planned, along with a future engine replacement program and structural upgrades.

C-141 Aircraft: Air Mobility Command identified a core of 63 Air Reserve Component (ARC) C-141C aircraft that will remain in the inventory through FY 2006. They will remain an integral part of the strategic airlift forces until the C-17 is fully fielded. The core 63 aircraft, which include 18 ANG aircraft, are currently receiving four concurrent modifications required to keep them flying until the C-17 transition is complete. The modifications include the All Weather Flight Controls System, the GPS Enhanced Navigation System, the Fuel Quantity Indicating

System, and the Defensive Systems package providing missile warning and countermeasures dispensing. Additional safety modifications which are also to be initiated for the C-141 include the Traffic Collision Avoidance System II and the Terrain Avoidance Warning System.

C-130X: AMC in coordination with Air Combat Command (ACC), Air Force Reserve Command (AFRC), Air Force Special Operations Command, and the ANG is developing an avionics modernization program to convert all C-130/E/H1/H2/H3 block aircraft into one baseline avionics configuration. The goal is to have only two configurations of C-130 aircraft (C-130X and C-130J) by FY 2010. The program is broken down into Phase 0 (Prerequisite Modifications) - ongoing, Phase 1 (Avionics Modernization Program) – FY 2001/2002, and Phase 2 (Structural Engines and Environmental Improvements) – FY 2005 for selected E-model aircraft.

C-130J Aircraft: There are currently 14 C-130Js on contract for the ANG; eight for the 135th AW, Maryland ANG, three for the 143rd AG, Rhode Island ANG, and three for the 193rd SOW, Pennsylvania ANG. The first two C-130Js have been delivered to the 135th AW, Maryland ANG.

4. Special Mission Aircraft

LC-130 Aircraft: Ski equipped aircraft support airlift operations to cold weather areas where other airlift aircraft cannot operate. These aircraft were recently modified with ARC-210 Satellite Communications and Demand Assigned Multiple Access capability. This is the first airborne platform to acquire this new technology. Additionally, these aircraft are on contract to be modified with the APN-241 Low Power Color Radar and Electronic Flight Instrument System Suite.

LC-130 Aircraft

C-22 Aircraft Replacement: The C-22 fleet (flown and supported by the 89th Airlift Wing, Andrews AFB, Maryland) will be phased out in FY 2001 – FY 2003, leaving an unfunded requirement for replacement aircraft. The C-22 aircraft are not being upgraded to meet new world Federal Aviation Agency/International Civil Aviation Organization requirements. The C-22 replacement will be a 40-70 passenger jet with long range capability for worldwide transportation of AF, DoD senior officials, foreign dignitaries, and legislative and executive branch members. Candidate aircraft include the C-32 (757), C-40 (737), and the Airbus Corporate Jetliner.

C-26 Aircraft: Aircraft upgrades to the C-26 involving the WF-360 Forward Looking Infra-Red (FLIR) imaging system began in FY 1998 and continued into FY 2000. In addition to the FLIR, the upgrade includes a sensor controller operating system upgrade, touchscreen technology, emergency battery backup, Wulfsburg AM/FM/HF/VHF/UHF radios, and fire

detection/suppression for the FLIR pod. In the near future the KS-87 "wet film" cameras (for the C-26) will be upgraded with improved electro-optical technology.

C-38 Aircraft Procurement: The C-38 Astra SPX jet was chosen to replace four C-21 aircraft. Two C-38 aircraft were delivered to the 201st Airlift Squadron in the third quarter of FY 1998. There is a requirement for two more C-38s to bring the unit to full mission capability.

OC-130 Aircraft: This observation/surveillance aircraft (KEEN SAGE) began coming into inventory in FY 1999 and continues in FY 2000. Eight aircraft in the ANG will be modified to carry the four camera systems and replace the retired Pacer Coin C-130s flown by the ANG for the last several years. This camera is an upgraded Westcam sensor similar to that in the Predator Unmanned Aerial Vehicle (UAV) aircraft and exploits the abilities of trained image interpreters who perform airborne sensor operations from a pallet workstation in the aircraft. Imagery and observations can then be datalinked to ground command centers.

EC-130E Aircraft: This Psychological Operations aircraft is scheduled for conversion to the new EC-130J model. This upgrade will also convert the J-model mission equipment cross-deck for the Commando Solo mission. Currently, three basic airplanes are on contract and funds for a fourth were appropriated in FY 2000 to allow for an additional plane and mission equipment deck.

Modular Airborne Fire Fighting System (MAFFS): The ANG is an active participant with the United States Departments of Agriculture and Interior fighting fires that threaten our precious forest resources. MAFFS is a roll-on, roll-off platform that carries 3000 gallons of retardant used in fighting forest fires. The retardant is sprayed either on a fire to aid in putting it out or on unburned forest to slow the spread of the fire. The current system is 27 years old, is 50 to 70 percent less effective than current tankers, and is reaching the end of its operational life of 30 years. Congress has appropriated $9.5 million for replacement of this system and the Air Guard Acquisition office and the US Forest Service will be procuring the new system this year.

C-130 releasing fire retardant material

5. Rescue Aircraft

HH-60

HH-60 Helicopter: A new Altitude Hover and Hold System will provide the HH-60 greater stability during critical rescue mission hover maneuvers. Additionally, the 701C Engine Retrofit and Improved Flight Controls Program replaces existing engines and improves flight control systems. The HH-60's performance is significantly degraded by the additional aircraft weight from various past aircraft upgrades. The new engines have 20 percent more power providing a greater margin for safety on hot days or at a high altitude.

HC-130 Aircraft: A low cost NVIS Compatible Lighting System modification is in the contract phase for the CAF rescue fleet. A Personnel Locator System will be installed on Kulis, AK, and Moffet, CA, aircraft. This system will give rescuers bearing, range, and authentication information on downed aircrew equipped with the PRC-112 radio.

6. Mobile Approach Control System

MPN-14k Mobile Approach Control System (MACS): MACS provides surveillance assistance in support of the air defense mission and aids in detection/identification of unknown targets. This information is then relayed to air defense command centers. MACS may also be used to support worldwide emergency and disaster relief situations requiring ATC services during peacetime. The MACS presently being used by the ANG was declared operational in the early 1950s. Although some upgrades have occurred to the MPN-14k through the years, there are currently no spare parts remaining to replace failing equipment. As such, the ANG is looking to begin an acquisition effort to replace the existing system.

(b) Average Age of Major Items of Equipment: Overall, the average age of MIE within the ANG is 30 years. Some examples include:

Aircraft	Average Age	Aircraft	Average Age
F-16 A/B	19.5	C-5A	27.9
A/OA-10	18.3	KC-135E	41.2
F-15 A/B	21.9	C-141	33.4
B-1	11.1	C-22	14.1
HH-60	8.3	C-130E	37.1
P-4	23	MPN-14k	45+

(c) Compatibility of Current Equipment with Active Component: Compatibility problems exist within ANG and AC equipment in the following areas:

F-16A/B (Block 25/30): Internal components are no longer compatible with the Active component's newer aircraft and require special logistical support. Many ANG F-16s also lack precision attack capability and electronic warfare compatibility with AC capabilities.

New York ANG F-16A

Senior Scout: The Senior Scout training platform has not been kept up-to-date with changes in active aircraft. Although additional funding was directed for the operations and maintenance, manpower, and procurement of the program, an additional $5.3M is required for the necessary modernization of the Senior Scout system.

Combat Intelligence System (CIS): First generation CISs delivered to ANG units (while AC units are now receiving 3rd generation systems) were found to not be year 2000 compliant. They are now being replaced with personal computer based systems provided by the major commands, which are compatible with the force level Tactical Battle Management Communication System.

(d) Maintenance Programs: The F-16A/B series fighters are no longer considered combat deployable and system age is significantly affecting F-15A/B supportability and mission readiness. The KC-135 suffers from Global Air Traffic Management (GATM) non-compliance, and the KC-135E variant can no longer meet global environmental standards. Corrosion and structural problems have severely affected the ANG's C-5 fleet. Air defense Regional and Sector Air Operations Center data processing capabilities are also becoming inadequate.

F-16 with LANTIRN and Targeting Pods

Three Block 42 F-16 units maintain Laser Aided Navigation and Targeting Infrared for Night (LANTIRN) precision targeting capability only by sharing one unit's complement of LANTIRN pods and support equipment. The lack of the requisite support equipment severely impacts the overall deployment ready status of LANTIRN assets.

The MPN-14k MACSs are well beyond their planned service life, have long passed their point of economical sustainment, and now experience excessive down-time and unacceptably low rates of operational availability. Although some upgrades have occurred to the 45+ year-old equipment, there are currently no spare parts available with which to replace failing equipment.

(e) Modernization Shortfalls: The ANG, as a part of the Total Air Force, is severely deficient in preparing to meet GATM requirements and Stage III noise reduction standards. Although a number of alternatives for various aircraft are under study, regardless of the measures undertaken, they lack funding and will have severe operational constraints on modification schedules.

The MPN 14k Replacement expects nominal procurement funding in FY 2000 to initiate its program. However, research and development funding is also required for engineering and system integration development prior to commencing a full-scale acquisition effort.

The F-15 A/B program is still short of full funding for the FDL installation. The F-15 A/B engines are a chronic readiness issue due to worn engine cores and erosion of the parts manufacturing contractors. Due to a shortage of funds in the F-15 modernization program, the decision was made to prioritize the F-15 C/D fleet for the 220E engine upgrade. The F-15 A/B is entering the five year window prior to retirement which invokes the sunset restrictions on modernization programs. The ANG will inherit the engine upgrades when the F-15 C/Ds flow to the ANG starting in FY 2003. F-16 A/B's 220E upgrades are scheduled to be completed by the end of the year.

ANG F-15A

(f) Equipment Readiness: ANG equipment, although much of it is of an older generation, is generally in a ready-to-go condition. However, because of capability shortfalls in the older equipment, some aircraft are not deemed suitable by the CINCs for deployment to their area of responsibility. Likewise, some air traffic control and approach control facilities, while still functioning, are generations behind the state of the art in their design. In addition, again due to the age of the equipment, the logistics tail for some equipment is now inadequate, awkward, or non-existent.

(g) Other Equipment Specific Issues: Many new missions are migrating to the ANG (F-15 & F-16 pilot training, Engineering Installation activities, Communications Support missions, etc.) but some needed equipment is lacking (F-15 pilot simulator), and funding for new missions is severely limited to non-existent.

The ALQ-131 Block II and ALQ-184 electronic countermeasures pods are used on over 1300 F-16, A-10, and C-130 aircraft. Developed many years ago, both are now experiencing numerous reliability, maintainability and operational shortfalls. An affordable program to modernize and maintain these important self-protection systems is needed. Upgrades must stress common modules and approaches to lower the overall cost of ownership. Important requirements include adding Mil-Std-1553 communications, upgrading obsolete processors and other parts, replacing obsolete ground support stations with a common station, adding towed decoys, and adding a missile warning system. Most importantly, a pod based system that meets the warfighter's requirements and which is easily moved between aircraft will provide the flexibility and reduced logistics footprint needed for future AEF deployments.

b) Changes Since Last NGRER: There are few changes since the last report. A few new programs have been added (for example KC-X) but the equipping philosophy has not changed. There has been an increase in visibility in some areas as a result of the ANG's non-participation in Bosnia and Kosovo combat operations (due to not having precision attack capability) and this has energized high level talks to determine fixes for this problem.

c) Future Years Program (FY2001 – 2003)

(1) FY 2003 Equipment Requirements: ANG Medical Squadrons have a significant shortfall of medical training equipment including complete care mannequins, dental mannequins, and durable medical equipment to outfit 104 units at an estimated cost of $3M.

(2) New Equipment Procurements: Funding for procurement of major items of ANG combat and direct combat support equipment are programmed in the POM by the Active AF (to include needs of the ANG) as required to meet planned Total Force employment plans. The Congress, in their annual budget appropriation, also directs some additional ANG administrative, non-combat, and special mission equipment procurements. Anticipated additions include replacement aircraft for the three C-22 aircraft about to be retired, and two additional C-38 aircraft to meet small load special mission requirements.

C-38A

Other ANG procurements are expected to include additional F-15E engine upgrade kits and completion of the installation of the FDL into F-15s. Three new C-130J-30 aircraft are to be fielded for the 143rd Airlift Wing, Quonset Point, RI, and an EC-130J will be obtained for the 193rd Special Operations Wing, Harrisburg, PA. Litening II targeting pods are being procured for the ANG's F-16 Block 25/30 aircraft, and when upgraded with GPS, CMS, NVIS, and SADL under the CUPID program, these aircraft will be as capable as any other F-16 in the AF inventory.

C-130J

KC-135E engine replacement upgrades will also continue as funding permits, following a Congressionally directed engine replacement program review. One hundred fourteen KC-135s remain to be upgraded.

(3) Transfers from AC to RC: The F-15C is expected to begin transition from the AC to the ANG starting in FY 2003 into FY 2004. The C-5A is also expected to be re-engined and moved to the Guard and Reserve rather than retired.

(4) Withdrawals from RC Inventory: The C-22 is programmed to begin leaving the ANG's aircraft inventory in FY 2001, culminating in FY 2003. A suitable replacement program has not yet been implemented to assume the special mission responsibilities currently assigned to the C-22. The C-141 phase out is similarly scheduled to be completed in FY 2004.

(5) Equipment Shortages and Modernization Shortfalls: The most significant challenge to ANG readiness is that of equipment. The ANG has the oldest aircraft in the AF inventory. Modernization of the fleet to meet the warfighting CINC taskings is critical to a robust and lethal Total Force.

The number one ANG priority is fielding precision strike capability in its fighters, followed by fielding a datalink/CID on its entire fleet. To increase its precision strike capability, the ANG needs an additional 104 PATS pods.

Shortage of 10- and 28-carry weapons modules limits use of the ANG B-1 bombers in a mixed munitions role. Eighteen additional B-1 28-carry modules are needed.

A Helmet Mounted Cueing System with High Off-Boresight Missile Integration capabilities is also needed to optimize air-to-air and air-to-ground weapons employment on all fighter platforms.

HC-130 combat search and rescue aircraft need a FLIR radar providing them the ability to see through smoke, light fog and rain, permitting crews to operate under the worst of conditions. Nine ANG aircraft require this capability.

The SADL provides an all-weather, low-cost data link using off-the-shelf Enhanced Position Location Reporting System radios and provides a major improvement in preventing fratricide during combat operations. SADL terminals are needed for 64 ANG A-10s. Carry-on SADL units are needed for ANG C-130s and KC-135s, where it is planned to wire all aircraft, and equip 50 percent, moving terminals between aircraft as needed. SADL Gateway terminals are also needed in elements of the Theater Air Control System (TACS) to allow all TACS participants to view the target, track, and deployed forces digitized battlefield information broadcast on the net.

The F-16 CUPID upgrade for Block 25/30 aircraft provides for SADL; however, it does not provide an upgraded color display capability. The addition of the Advanced Display Processor and Color Display configuration optimizes utilization, increases aircraft processing capability, pilot situational awareness, and combat survivability and lethality. Two hundred eighty-one (281) color displays are required.

The fielding of the FDL opens many new opportunities for improving the capabilities of the F-15. Effective training of pilots in the use of those expanded capabilities is

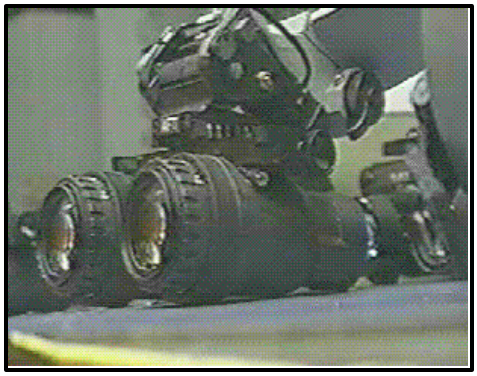
essential to optimize the F-15's employment. An F-15 Advanced VTR is needed to fully capture all the expanded training mission data now derived from addition of the FDL. One hundred sixteen (116) ANG F-15s require this capability.

The B-1 currently lacks the capability to update target and threat information while enroute to its target. A Beyond Line-of-Sight capability is needed to process and display update information while enroute, thus increasing its lethality and survivability. Twenty sets are required for ANG aircraft.

B-1B

Tactical Digital Information Link-J (TADIL-J)/NATO Link-16 has been identified as the primary tactical data link for future joint military operations. Most tactical command and control units and fighter aircraft will have some TADIL-J capability soon. However, the three Sector Air Operations Centers have no TADIL-J capability and require Joint Tactical Information Distribution System radios to begin integration into the TADIL-J network.

NVGs provide C-130 aircrews with situational awareness, turn-point, landing zone, and drop zone identification, formation positioning and deconfliction, and integration in nighttime battlespace. Eleven ANG C-130H2 and C-130J equipped units do not have NVGs and the required support equipment. Four hundred (400) sets are required.



Night Vision Goggles

To support the optimized capability of NVGs, a fully NVIS compatible cockpit is required. While most of the newer C-130 aircraft are NVIS compatible, the ANG's C-130E and C-130H2 aircraft are not. While the ANG's C-130E aircraft will eventually be replaced by newer C-130Js, NVIS compatible cockpit lighting is required for 104 ANG C-130H2 aircraft.

International airspace management reduced VHF radio channel spacing to create additional frequencies for voice communications between air traffic control and aircraft. This change affects all aircraft operating at altitudes above 24,500 feet. The ANG's three C-22s and 18 C-141s routinely operate in this high altitude environment and must have the 8.33 channel spacing VHF radios.

Typical aircraft countermeasures against infrared guided missiles are made from highly visible magnesium teflon. Covert self-protection countermeasures are undetectable in the visual spectrum and do not highlight aircraft location to the enemy. The BOL IR covert flare capability modification for the ANG's F-15s will provide exceptional preemptive and reactive protection. One hundred eight (108) ANG F-15 aircraft require modification. The Pylon

Integrated Dispenser System universal modification for the ANG's 342 F-16 Block 25/30 aircraft will increase their self-protection and smart weapons employment capabilities.

Current antenna locations and installations for the ALR-69 radar warning receivers (RWR) on A-10 and F-16 aircraft result in providing late warnings of modern air-to-air and surface-to-air threats. Modifications to correct this problem have been developed. One hundred ninety (190) ANG F-16s require the change and 102 ANG A-10s must be updated.

The HC-130 Integrated Countermeasures System merges inputs from the Missile Warning System, Countermeasures Dispensing System, and RWRs to simplify operations, relieve reliance on a human interface, and defeat threats to the aircraft. The ANG requires 13 HC-130 aircraft to be upgraded.

ANG C-130 aircrews have no ballistic protection when exposed to small arms and anti-aircraft fire while operating in low to medium threat environments. A light weight removable armor system was developed as a result of operational experience in Bosnia. Thirty-two (32) C-130 armor systems are required for ANG aircraft.

The HH-60 is particularly vulnerable to shoulder fired missiles because of the low altitudes and relatively low airspeeds at which it routinely conducts its missions. A program to provide a robust countermeasure capability is under development, but is 5 to 7 years from fielding, is grossly underfunded, and does not include ANG aircraft. The HH-60 Self Protection System (SPS) provides this capability now and uses equipment slated to be used in the developmental system. The ANG requires 18 HH-60s to be equipped with SPS.

The A/OA-10 has a serious thrust deficiency in its operational environment. As taskings evolved, commanders have had to reduce fuel loads, limit take-off times to early morning hours and refuse taskings that increase gross weights to unsupportable limits. One hundred two (102) ANG A/OA-10s need upgraded structures and engines (2 engines per aircraft plus 12 spares for a total of 216 engines).

The ANG Block 42 F-16 aircraft require new engines to increase their thrust in order to perform the multiple combat taskings now being assigned. The simultaneous carrying of both LANTIRN and HTS pods significantly degrades performance of the aircraft with the current engines. A total of 52 upgraded engines are required for the ANG's F-16 Block 42 fleet.

The ANG F-16 and F-15 fighter aircraft equipped with the Pratt & Whitney F100-PW-100 and –200 engines are flying with the oldest design production of the engine. The engine has become increasingly difficult and expensive to maintain due to high usage, age, and dated technology. Kits are available to convert these engines to a F100-PW-220E, adding increased thrust, increased reliability, reduced maintenance, and better fuel efficiency. The ANG requires 297 upgrade kits.

C-130Js are being provided as replacements for aging C-130 aircraft currently in use by the ANG. Three new C-130J-30 aircraft are under contract and destined to go to the 143rd AW, Quonset Point, RI. However, this will result in a mixed unit of 3 C-130Js and 5 C-130Es.

The five C-130Es need to be replaced with C-130Js to simplify maintenance training, logistics support, and manpower.

In a congressionally directed program, aging EC-130Es are being replaced with new C-130Js, with the current mission equipment being moved from the old aircraft to the new models. Four aircraft have been funded for delivery to the 193rd SOW, Harrisburg, PA. One additional aircraft is needed to complete the unit's conversion and prevent leaving the unit with a mixed fleet of E and J model aircraft.

The C-22B fleet is scheduled for retirement starting in October 2001, with no new aircraft purchased to fill this requirement. The C-22 provides support for Congressional, DoD, AF, and National Guard Team missions worldwide. Four replacement aircraft are required.

C-22B

Two additional C-38A aircraft are required to complete the fleet of four aircraft at Andrews AFB, MD. These ANG aircraft support Congressional, Executive Branch, DoD, AF and National Guard travel missions worldwide. The additional aircraft are required to fulfill the numerous small load taskings received and take advantage of scheduling, training, and aircraft reserve efficiencies four aircraft provide over two.

To increase its High Threat Survivability, towed decoys are required for the ANG fighter aircraft, and the HH-60's require a SPS.

The MACS presently being used by the ANG attained its IOC in the 1950s, and although there have been some upgrades to the MPN-14k through the years, there are currently no spare parts remaining to replace failing equipment. Efforts to implement a replacement program have been less than fully successful.

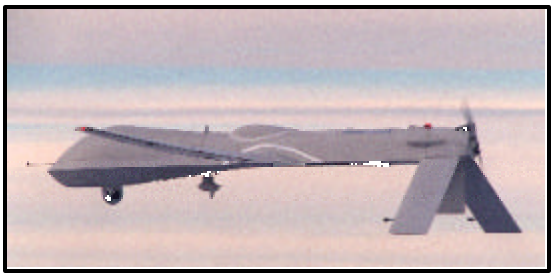
There are only 29 P-23 fire trucks assigned to the ANG against 50 authorizations. Additionally, of the 123 P-19 fire trucks currently assigned, 103 are replacement eligible due to age and wear and tear. Currently P-4 fire equipment is being retained against the shortages in P-23 and P-19 fire trucks. The average age of the P-4 is 23 years old.

The ANG is authorized 335 HMMWVs but has only 194 assigned.

(6) Effects on Overall Readiness: While basically ready for General Purposes, lack of full CQ capability throughout the ANG fleet will limit full participation in CINC directed combat operations. In addition, lack of GATM compliance will significantly impact future operations worldwide. Finally, lack of a suitable replacement for the C-22 special mission transport will have a significant impact on the transportation of key government officials and military leaders in the course of their duties.

(7) Other Comments: The ANG will be introduced into UAV operations beginning in FY 2000. The ANG staff is working in collaboration with ACC to introduce the

Nevada ANG in this mission. UAV operations break a lot of paradigms associated with traditional flying operations. UAV Teams, which are the operating elements, are not equipped with individual PAA, rather are provided aerial vehicles with which they deploy. The Nevada ANG will build one or two operational teams at Indian Springs AAF, NV, and will partner in a Total Force effort.



Predator UAV

d) Remaining Shortfalls and Unfunded Requirements

(1) Out-year FYDP Procurements (FY 2004 – FY 2005): The ANG expects that C-130J aircraft procurements will continue to be directed at a low rate through FY 2008, replacing all ANG C-130Es.

(2) Other Requirements Not Addressed in the FYDP: *Chart 1* below highlights the ANG's current Prioritized Unfunded Equipment Requirements:

Chart 1
PRIORITIZED UNFUNDED EQUIPMENT REQUIREMENTS

ITEM	QUANTITY	UNIT COST	TOTAL
PRECISION STRIKE			
PATS for F-16	104	$1,500,000	$156,000,000
HMCS/HOBM Integration			$10,000,000
B-1 Weapons Modules	18	$1,900,000	$34,200,000
H/C-130 FLIR	9	$500,000	$4,500,000
DATA LINK/COMBAT ID			
SADL:			
A-10 SADL	64	$135,000	$8,640,000
Carry-on SADL: C-130: 220 wired; 110 sets KC-135: 224 wired; 112 sets	222	$26,785 $27,272	$12,000,000
SADL Gateways/Integration			$5,000,000
F-16 Color Displays	281	$75,000	$21,075,000
F-15 AVTR	116	$35,000	$4,060,000
B-1 BLOS	20	$2,200,000	$44,000,000
JTIDS for SAOC	3	$500,000	$1,500,000
24-HOUR OPERATIONS			
NVGs	400	$6,795	$2,718,000
C-130H2 NVIS Upgrade	104	$130,000	$13,520,000
8.33 kHz Radios for C-141	18	$277,777	$4,999,986
8.33 kHz Radios for C-22	3	$206,666	$619,998

ENHANCED SURVIVABILITY			
Covert Flare Capability:			
BOL IR – F-15	108	$187,000	$20,196,000
PIDS Universal - F-16	342	$61,600	$21,067,200
ALR-69 Antenna Optimization – F-16, A-10			
F-16	190	$82,900	$15,751,000
A-10	102	$49,019	$5,000,000
IEWS, HC-130	13	$100,000	$1,300,000
C-130 Armor	32	$125,000	$4,000,000
HH-60 SPS	18	$250,000	$4,500,000
SUSTAINMENT/SUPPORTABILITY			
KC-135E Engine Upgrade/Replacement	114	TBD	TBD
A-10 Re-Engine:			
Structures	102	$500,000	$51,000,000
Engines	216	$1,727,000	$373,032,000
F-16 Block 42 Re-Engine	57	$4,000,000	$228,000,000
220E Engine Kits for F-15/F-16 Fleet	253	$1,500,000	$379,500,000
NEW ACQUISITIONS			
F-16C	18	$26,000,000	$468,000,000
C-130J	5	$58,400,000	$292,000,000
EC-130J	2	$90,000,000	$180,000,000
KC-X Analysis of Alternatives	1	$3,000,000	$3,000,000
C-22 Replacement	4	$65,000,000	$260,000,000
C-38 Aircraft	2	$18,000,000	$36,000,000

e) Summary/Conclusions: The ANG currently bases its needs on requirements necessary to meet CINC guidelines for fighting forces. These CINC combat requirements are embodied in the CQ which calls for a 24-hour operational capability, survivability in a high threat environment, a combat identification capability, and a precision attack capability. ANG's logistics and ground support elements are considered early-on in the acquisition process, and all its efforts are targeted at remaining well trained, prepared to react, and ready to respond.

During the transition to the EAF, all AF modernization and support efforts should include the entire Total Force. The objective is to field equivalent capabilities in each of the major weapons systems, streamlining the infrastructure and simplifying the deployment requirements to make the interchange of units more flexible. The AF program must be structured to project an equipping and funding philosophy reflecting this Future Total Force approach.

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Table 1

Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
FIGHTER,A-10A	A-010A	9,970,000	72	72	72	72	**72**
BOMBER,B-1B	B-001B	263,420,000	16	16	16	16	**16**
AIRLIFT,C-5A	C-005A	137,760,000	12	12	12	12	**12**
OPS SPT,C-21A	C-021A	3,390,000	2	2	2	2	**2**
OPS SPT,C-22B	C-022B	18,560,000	3	2	1	0	**0**
AIRLIFT,C-130E	C-130E	11,140,000	64	64	64	64	**64**
AIRLIFT,C-130H	C-130H	37,400,000	136	136	136	136	**136**
AIRLIFT,C-130J	C-130J	56,500,000	8	8	8	8	**8**
AIRLIFT,C-141C	C-141C	45,180,000	16	16	16	16	**16**
OPS SPT,C-26B	C-26B	4,670,000	11	11	11	11	**11**
OPS SPT,C-38A **	C-38A	15,000,000	2	2	2	2	**4**
OPS SPT,C-XX *	C-XX	0	0	1	2	3	**4**
EL WARFARE,EC-130E	EC-130E	28,740,000	4	4	4	4	**4**
EL WARFARE,EC-130J	EC-130J	86,500,000	1	1	1	1	**1**
FIGHTER,F-15A	F-015A	27,040,000	82	82	82	82	**82**
FIGHTER,F-15B	F-015B	27,040,000	16	16	16	16	**16**
FIGHTER,F-15C	F-015C	27,040,000	2	7	7	7	**7**
FIGHTER,F-16A	F-016A	13,150,000	76	76	76	76	**76**
FIGHTER,F-16B	F-016B	13,150,000	18	18	18	18	**18**
FIGHTER,F-16C	F-016C	15,910,000	339	339	339	339	**339**
FIGHTER,F-16D	F-016D	15,910,000	34	40	40	40	**40**
RESCUE,HC-130N	HC-130N	14,000,000	3	3	3	3	**3**
RESCUE,HC-130P	HC-130P	13,360,000	4	4	4	4	**4**
RESCUE,HH-60G	HH-060G	11,500,000	15	15	15	15	**15**
AIR REFUELING,KC-135E	KC-135E	35,000,000	110	110	110	110	**110**
AIR REFUELING,KC-135R	KC-135R	57,690,000	94	94	94	94	**94**
AIRLIFT,LC-130H	LC-130H	59,300,000	10	10	10	10	**10**
RESCUE,MC-130P	MC-130P	15,400,000	4	4	4	4	**4**
AIR SPT,OA-10A	OA-010A	9,970,000	18	18	18	18	**18**
* C-XX is a planned replacement for the C-22B which is being phased out of the inventory.							
** The requirement for two additional C-38A aircraft is immediate but funding is unavailable.							

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Average Age of Equipment

NOTE: This table provides the average age of selected major items of equipment. Since equipment is normally procured over several years, the average age provides a projected average age of the fleet for budget year (BY) 2001.

NOMENCLATURE	*EQUIP No.*	*AVERAGE AGE*	*REMARKS*
FIGHTER,A-10A	A-010A	18	
BOMBER,B-1B	B-001B	11	
AIRLIFT,C-5A	C-005A	28	
OPS SPT,C-21A	C-021A	12	
OPS SPT,C-22B	C-022B	14	
AIRLIFT,C-130E	C-130E	37	
AIRLIFT,C-130H	C-130H	9	
AIRLIFT,C-130J	C-130J	0	
AIRLIFT,C-141C	C-141C	33	
OPS SPT,C-26B	C-26B	5	
OPS SPT,C-38A	C-38A	1	
EL WARFARE,EC-130E	EC-130E	35	
FIGHTER,F-15A	F-015A	22	
FIGHTER,F-15B	F-015B	22	
FIGHTER,F-15C	F-015C	22	
FIGHTER,F-16A	F-016A	20	
FIGHTER,F-16B	F-016B	20	
FIGHTER,F-16C	F-016C	13	
FIGHTER,F-16D	F-016D	13	
RESCUE,HC-130N	HC-130N	14	
RESCUE,HC-130P	HC-130P	14	
RESCUE,MC-130P	MC-130P	14	
RESCUE,HH-60G	HH-060G	8	
AIR REFUELING,KC-135E	KC-135E	41	
AIR REFUELING,KC-135R	KC-135R	39	
AIRLIFT,LC-130H	LC-130H	13	
AIR SPT,OA-10A	OA-010A	18	

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Service Planned Procurments (P-1R Data)

NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurment funds as identified in the P-1R exhibit of the President's budget. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 2001*	*FY2002*	*FY 2003*	*REMARKS*
B-1B	16,000,000	27,400,000	19,400,000	
A-10	12,700,000	4,900,000	6,200,000	
F-16	44,900,000	50,900,000	40,000,000	
C-5	10,700,000	12,200,000	10,700,000	
C-21		2,100,000	2,000,000	
C-141	200,000	300,000	300,000	
C-130	41,000,000	30,600,000	43,700,000	
C-135	67,900,000	17,700,000	13,900,000	
DARP		3,000,000	3,100,000	
OTHER AIRCRAFT	*			
AIRCRAFT SPARES/REPAIR PARTS	1,000,000	900,000	1,000,000	
AIRCRAFT SUPPORT EQUIPMENT & FACILITIES	42,500,000	40,200,000	40,300,000	
BUSES	200,000	700,000	2,500,000	
TRUCK MULTI-STOP 1 TON 4X2	3,000,000	2,100,000	300,000	
FAMILY MEDIUM TACTICAL VEHICLES	2,700,000	5,000,000		
HIGH MOBILITY VEHICLE (MYP)	2,300,000	1,600,000	100,000	
ITEMS LESS THAN $5,000,000	2,100,000	7,400,000	15,300,000	
TRACTOR, TOW, FLIGHTLINE	2,200,000	1,600,000	2,700,000	
ITEMS LESS THAN $5,000,000	1,900,000	700,000	2,300,000	
TRUCK CRASH P-19	7,100,000	100,000	200,000	
ITEMS LESS THAN $5,000,000	400,000	400,000	200,000	
TRUCK, F/L 10,000 LB	200,000	400,000		
ITEMS LESS THAN $5,000,000	500,000	100,000	200,000	
TRUCK, DUMP	500,000	600,000	100,000	
RUNWAY SNOW REMOV AND CLEANING EQUIP	2,200,000	300,000	100,000	
COMSEC EQUIPMENT	1,800,000	1,800,000	1,800,000	
INTELLIGENCE COMM EQUIP	2,000,000	2,000,000	2,000,000	
NATIONAL AIRSPACE SYSTEM	3,300,000	8,500,000	3,800,000	
THEATER AIR CONTROL SYS IMPROVEMENT	1,900,000	1,900,000	1,900,000	
WEATHER OBSERV/FORCAST	600,000	600,000	600,000	
AF GLOBAL COMMAND & CONTROL SYS	900,000	900,000	900,000	
AIR FORCE PHYSICAL SECURITY SYSTEM	1,800,000	1,800,000	1,800,000	
COMBAT TRAINING RANGES	1,000,000	2,200,000	3,500,000	
BASE LEVEL DATA AUTO PROGRAM	500,000	900,000	800,000	
THEATER BATTLE MGT C2 SYS	1,500,000	1,500,000	1,500,000	
USCENTCOM	200,000	200,000	200,000	
NAVSTAR GPS SPACE	200,000	300,000	300,000	
TACTICAL C-E EQUIPMENT		20,000,000	20,000,000	
BASE COMM INFRASTRUCTURE	23,600,000	23,900,000	24,200,000	
ITEMS LESS THAN $5,000,000	1,500,000	1,500,000	1,500,000	
COMM ELECT MODS	100,000	100,000	100,000	
BASE/ALC CALIBRATION PACKAGE	700,000	500,000	600,000	
ITEMS LESS THAN $5,000,000	3,000,000	2,100,000	1,900,000	
NIGHT VISION GOGGLES	100,000	400,000	500,000	
ITEMS LESS THAN $5,000,000	900,000	700,000	1,000,000	
MECHANIZED MATERIAL HANDLING EQUIP	1,200,000	700,000	1,100,000	
ITEMS LESS THAN $5,000,000	1,400,000	1,100,000	1,500,000	

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Service Planned Procurments (P-1R Data)

NOMENCLATURE	*FY 2001*	*FY2002*	*FY 2003*	*REMARKS*
FLOODLIGHTS	1,700,000	800,000	800,000	
ITEMS LESS THAN $5,000,000	1,000,000	700,000	700,000	
BASE PROCURED EQUIPMENT	4,700,000			
PHOTOGRAPHIC EQUIPMENT	500,000	500,000	300,000	
AIR CONDITIONERS	2,400,000	800,000	400,000	
ITEMS LESS THAN $5,000,000	6,200,000	3,100,000	3,300,000	
TOTAL PROCUREMENTS FOR THE ANG	**326,900,000**	**290,700,000**	**281,600,000**	
* ITEMS UNDER $50,000				

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 1998*	*FY 1999*	*FY 2000*	*REMARKS*
C-130J Aircraft	226,000,000	192,000,000		
Night Vision Imaging Sys (NVIS) F-15/F-16	8,900,000	3,000,000	600,000	
SADL A-10	3,100,000	6,500,000	3,050,000	
SADL--HC-130, HH-60			1,350,000	
Gateway/Support SADL			2,500,000	
Ground Tactical Air Control SADL			1,000,000	
Color Display F-16 Block 25/30			5,000,000	
A-10 CMS			3,940,000	
A-10 PLS/LARS			1,140,000	
A-10 Tail Armor			860,000	
A-10 ADI Integration			400,000	
ALR-69 Antenna Optimization F-16 & A-10			2,500,000	
APN-241 Color Radar HC 130			4,500,000	
Aircraft Self Protection Systems	3,400,000			
Engine Kits, KC-135R	52,000,000			
Fighter Data Link (FDL) F-15A/B		5,000,000		
Precision Attack Targ Sys (PATS),F-16		5,500,000		
Precision Guided Munitions Capability, F-15/F-16	6,000,000			
Integrated Flight and Fire Control Computer, A-10			3,000,000	
Training Systems Upgrades	3,600,000			
Total Air National Guard	**303,000,000**	**212,000,000**	**29,840,000**	

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Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

NOMENCLATURE	*EQUIP No.*	*FY 2001 QTY*	*FY 2002 QTY*	*FY 2003 QTY*	*REMARKS*
FIGHTER,F-15C	F-015C		5		Increase in requirements
FIGHTER,F-16D	F-016D		6		Increase in requirements

ANG
FY 1999 Planned vs Actual Procurements and Transfers

This table compares what the Services planned to procure and transfer to the RC in FY 1999 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered in FY 1999.

Nomenclature	*Equip No.*	*FY 99 Transfers*		*FY 99 Procurements*		*FY 99 NGREA*	
		Planned	*Actual*	*Planned*	*Actual*	*Planned*	*Actual*
CONVEYOR,ASSY,RMA	1730012025141	3	0				
LOADER,AMMO,UNIV	1730014284275			4	0		
TRACTOR,ACFT,TOWING,MB-2	1740001438464YW			5	0		
TRAILER,GRD,MHU-110	1740004038235			13	0		
TRAILER,GRD BOOM	1740005556601	1	0				
TRACTOR,ACFT,TOWING,MB-4	1740005807990YW			40	0		
TRACTOR,TOW,FLIGHTLINE	1740010688945YW			37	0		
TRUCK,CARGO,UTIL,3/4T,4X4	2320005802955			45	0		
TRUCK,TRACTOR,5T,4X2	2320006112429			6	0		
TRUCK,PICKUP,3/4T,3PAX,4X4	2320008116869			1	0		
TRUCK,DUMP,55K GVW,6X4	2320010585725			2	0		
TRUCK,CARGO,2-1/2T,6X6,M1078	2320013543385			6	0		
TRUCK,CARGO,5T,6X6,M1083	2320013543386			45	0		
TRUCK,CARGO,HMMWV,M1097A2	2320013808604			1	0		
TRAILER,WATER,M-149	2330000606511	8	0				
TRAILER,CABLE REEL 10T	2330004207079			5	0		
SEMITRAILER,LOWBED 35T	2330010516648			5	0		
TRACTOR,WHEELED,INDUS,IW-90	2420014062995			5	0		
LOADER,SCOOP W/BACKHOE	3805001482169			3	0		
DITCH MACHINE W/TRAILER	3.80501E+12			5	0		
ROLLER,VIBRATING,TYPE II	3895010715625			2	0		
TRUCK,FORKLIFT,10000 LB,AT	3930004889695CT			6	0		
TRUCK,FORKLIFT,10000 LB,STD	3930008566897CT			4	0		
TRACTOR,WHSE,4000LB	3930010070115			22	0		
AIR CONDITIONER,C10	4120003033064	3	0				
WATER UNIT,ROWPU,600GPH	4610011934348			7	0		
SHELTER,TACTICAL,60Hz	5411010722517EJ			6	0		
RADIO,SET,AN/TRC-181	5820014341231EE			8	0		
SIGHT,NIGHT VIS,AN/PVS-4	5855006295334	40	0	14	0		
GOGGLES,NIGHT VIS,AVS-6	5855011384749			8	0		
GOGGLES,NIGHT VIS,PVS-7B	5855014225413	70	0				
GENERATOR SET,MEP803A	6115012755061			10	0		
POWER PLANT,AN/MJQ37	6115012996035			2	0		
POWER PLANT,AN/MJQ-1632	6115013640157	11	0				
AIRLIFT,C-141C	C-141C	8	0				

ANG Major Item of Equipment Substitution List

NO DATA AVAILABLE

III. Air Force Reserve (AFR) Overview

a) Current Status of the AFR

(1) General Overview

(a) Mission: The AFR supports the Air Force (AF) mission to defend the United States through control and exploitation of air and space. The AFR plays an integral role in the day-to-day AF mission and is not a force held in reserve for possible war or contingency operations. The AFR's ability to provide trained aircrews and mission-ready aircraft makes the Reserve an integral part of the Air Force's Global Reach -- Global Power concept.

(b) Resources: The AFR has 37 flying wings equipped with their own aircraft and seven associate units that share aircraft with active duty units. Two space operations squadrons share satellite control missions with the Active force. There also are more than 620 mission support units in the AFR, equipped and trained to provide a wide range of services, including medical and aeromedical evacuation, aerial port, civil engineer, security police, intelligence, communications, mobility support, logistics and transportation operations, among others. AFR has more than 440 aircraft assigned to it. The inventory includes the latest, most capable models of the F-16, O/A-10, C-5, C-141, C-130, MC-130, MC-130P, KC-135, B-52 and HH-60. Air Combat Command, Air Mobility Command and Air Force Special Operations Command would gain these aircraft and support personnel if mobilized. These aircraft and their crews are immediately deployable without need for additional training.

AFRC A/OA-10

(c) Organization

Office of the Air Force Reserve: The Office of AFR, located in the Pentagon, Washington, D.C., is headed by the Chief of Air Force Reserve, a Major General, who is the principal adviser to the Air Force Chief of Staff for all Reserve matters. Consistent with Air Force policy, the Chief of Air Force Reserve establishes Reserve policy and initiates plans and programs. In addition to being a senior member of the Air Staff, he is also Commander of the Air Force Reserve Command.

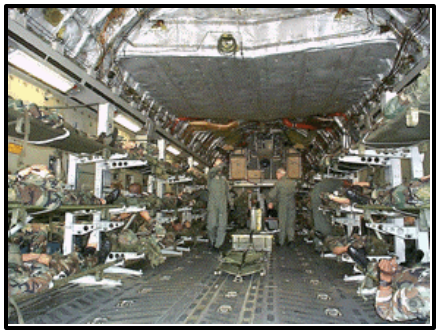
Headquarters, Air Force Reserve Command (AFRC): Headquarters, AFRC supervises the unit training program, provides logistics support, reviews unit training and ensures combat readiness. Within the headquarters element are divisions for operations, logistics, comptroller, administration and personnel support. Fourth Air Force at March Air Reserve Base, CA, 10th Air Force at Naval Air Station Joint Reserve Base, Fort Worth, TX, and 22nd Air Force at Dobbins Air Reserve Base, GA, report to

Headquarters, AFRC. They act as operational headquarters for their subordinate units, providing operational, logistical and safety support, and regional support for geographically separated units.

Air Reserve Personnel Center: Air Reserve Personnel Center, a field operating agency located in Denver, CO, provides personnel services to all members of the AFR and Air National Guard. Services include assignments, promotions, career counseling and development, and separation actions. The center also manages individual programs for the Ready Reserve and maintains master personnel records for all Guard and Reserve members not on extended active duty. In times of national need, the center would mobilize individual reservists and certain categories of AF retirees.

Exercises and Deployments: Realistic exercises and deployments are an essential element in maintaining combat readiness. AFR units participate in dozens of exercises each year and deploy to locations around the world. Exercises and deployments help reservists hone skills needed when responding to a variety of possible contingencies anywhere in the world.

Real-World Missions: AF reservists are on duty today around the world carrying out the AF mission of global engagement. A proven and respected combat force, the AFR also is quick to lend a helping hand. Humanitarian relief missions may involve anything from repairing roads and schools in a small village in Central America, to airlifting badly needed supplies into a war-torn city, to rescuing the victims of nature's worst disasters.



AFRC 315th Aeromedical Evacuation Squadron

At the request of local, state or federal agencies, the AFR conducts aerial spray missions using specially equipped C-130 aircraft. With the only fixed-wing aerial spray capability in the Department of Defense, these missions range from spraying pesticides for controlling insects to spraying compounds used in the control of oil spills. Other specially equipped C-130s fight the spread of forest fires by dropping fire retardant chemicals. Real-world missions also include weather reconnaissance, rescue, international missions in support of U.S. Southern Command, and aeromedical evacuation. AFR also takes an active role in the nation's counter-narcotics effort. Reservists offer a cost-effective way to provide specialized training, airlift, analysis, and other unique capabilities to local, state and federal law enforcement officials.

(2) Status of Equipment

(a) Equipment On-hand

1. Fighter Operations: The purpose of AFR fighter training is to be prepared to fly and fight to defend the United States and its allies. Both Reserve pilots and ground-support personnel receive realistic training and become familiar with different theaters of operations, allied procedures for conducting air campaigns, and procedures necessary to conduct

flight operations in different overseas locations. They also participate in various Flag Program exercises at varied locations, allowing them to maintain high combat readiness under simulated, yet realistic, wartime conditions.

F-16 Aircraft

F-16 Fighting Falcon: Aircrews train for missions in offensive counter air (air-to-air and air-to-ground), air interdiction, defense suppression, close air support, and air strike control. The F-16 is a highly maneuverable fighter designed to provide multi-role capability for today's complex battlefield environment. Reserve fighter units support theater CINCs in their war taskings and train using identical areas, tactics, and procedures as their active-duty counterparts. Recent contingency operations supported by Reserve fighter units include Operations PROVIDE COMFORT, DENY FLIGHT, NORTHERN WATCH, and DECISIVE EDGE.

A/OA-10 Thunderbolt II: The A-10 is primarily used in the ground attack roles of close air support and air strike control. The OA-10 is the observation version of the A-10.

2. Bomber Operations

B-52H: The 93rd Bomb Squadron was activated in December 1993 as part of the 917th Wing at Barksdale Air Force Base, LA. The unit is comprised of eight B-52H aircraft, 12 crews and more than 220 associated operations, maintenance, logistics, and support people. The 93rd Bomb Squadron flew its first flight February 2, 1994, and stood up mission ready June 1, 1995. The unit trains for its wartime mission to perform strategic attack, air interdiction, offensive counter-air, air-to-surface, suppression of enemy air defenses, aerial minelaying, and joint maritime operations.

Reserve B-52H on ramp at Barksdale AFB, LA

The Reserve bomber units support CINCs in their wartime taskings and train using the same conventional and nuclear weapons, tactics and procedures as their active-duty counterparts. Reserve pilots and ground support personnel receive realistic training and become familiar with different theaters of operations, allied procedures for conducting air campaigns, and procedures to conduct flight operations globally.

The unit has participated in the following Flag Program exercises and competitions: Joint Task Force, Long Shot, Quick Force, Mighty Thunder, Coronet Sentry, Pecos Thunder, William Tell, and Gunsmoke.

3. Airlift Operations: The AFR airlift mission involves training for transporting people, equipment, and supplies to meet US Armed Forces requirements anywhere

in the world. This mission and other roles, including fighter, air refueling, and airborne warning and control system missions, make the Reserve a key element in the Air Force's Global Reach -- Global Power concept.

Reserve aircrews operate unit-equipped aircraft or, through the Reserve's associate program, fly active-duty aircraft. Some crews provide long-range, worldwide airlift, and others perform shorter range transport of troops and cargo.

Reserve C-141 from 452nd AMW, March ARB, supporting evacuation in Nicaragua during Hurricane Mitch

C-141: The 452nd Air Mobility Wing, March Air Reserve Base, CA, is the first unit, Active or Reserve, to receive the C-141C glass cockpit modified Starlifter. The 452nd has undertaken responsibility for operational testing and evaluation of the glass cockpit modification effort and for developing initial cadre aircrew training. The second Reserve wing to receive the C-141C is the 445th Airlift Wing, Wright-Patterson Air Force Base, OH. The 459th Airlift Wing, Andrews Air Force Base, MD, was the first Reserve unit to own and operate the worldwide capable C-141B Starlifter, and the 907th Airlift Group (now 445th Airlift Wing), Wright Patterson Air Force Base, OH, was the second Reserve unit to receive the C-141B.

AFR C-5 from Westover ARB, MA, supporting Hurricane Floyd Evacuation at Patrick AFB, FL

C-5: The 433rd Airlift Wing, Kelly Air Force Base, TX, was the first Reserve wing to be assigned the long-range, heavy lift C-5A Galaxy aircraft. The 439th Airlift Wing, Westover Air Reserve Base, MA, was the second Reserve wing to be equipped with the C-5A.

C-130: About half of the Reserve's airlift units fly and own the shorter range C-130 Hercules tactical airlift aircraft. Its speed, range, load-carrying characteristics and capability to operate under difficult terrain conditions make it an invaluable and versatile aircraft. It is strong enough to deliver its cargo on unimproved landing strips. Other missions involve aeromedical evacuation and special air support operations.

More than 9,100 Reservists train in the C-130 airlift mission in a variety of aircrew, aircraft maintenance and support skills. In wartime, the AFR will provide 23 percent of Air Force's C-130 airlift force. Air Force's confidence in its air reserve forces is demonstrated by the AFR and Air National Guard role in the Coronet Oak (formally named Volant Oak) mission. Since October 1977, Reserve and Guard C-130 aircrews and maintenance personnel have operated out of Howard Air Force Base, Panama, on a rotational basis, flying throughout Central

and South America on American embassy resupply and medical airlift missions in support of U.S. Southern Command and embassies in South and Central America.

KC-135: Although primarily tasked with air refueling of other aircraft, the KC-135 Stratotankers also airlift cargo and personnel.

4. Other Supporting Operations: In AMC associate units, Reservists train with active-duty units and fly active-duty aircraft. Six different types of aircraft are flown to support the associate airlift mission: the C-141 Starlifter, C-5 Galaxy, C-9 Nightingale, C-17 Globemaster III, KC-135 Stratotanker and KC-10 Extender. Because they have dual capability as an aerial refueler or cargo transport, the KC-10 and KC-135 are used to meet the Air Force's refueling and airlift requirements.

Reserve KC-135R Supporting Southern Watch

More than 27,000 members train and support the Reserve's long-range airlift mission. AFR airlift crews perform humanitarian airlift missions throughout the world, including missions to the former Soviet republics, Mongolia, Somalia, and Bosnia. During the buildup and aftermath of the Persian Gulf War, they were called on to move massive amounts of military personnel and equipment to and from Southwest Asia.

5. Aerial Refueling Operations

KC-135 and KC-10: The AFR directly supports worldwide aerial refueling and cargo hauling missions flying KC-135 Stratotankers (cargo tankers) and KC-10 Extenders (advanced cargo tankers). Reserve squadrons equipped with KC-135 aircraft accomplish about 13 percent of the AF's KC-135 aerial refueling requirements.

Associate KC-10 units provide 50 percent of the KC-10 crews and contribute 50 percent to the maintenance force.

KC-135 from Reserve Associate Unit 931st Air Refueling Squadron refueling C-141

The military equivalent of the Boeing 707 transport, KC-135E and KC-135R aircraft can carry 120,000 pounds (54,000 kilograms) of transfer fuel. The KC-135E has an approximate range of 2,562 miles (3,919 kilometers), and the KC-135R has an approximate range of 2,800 miles (4,480 kilometers).

The KC-10, similar to its civilian counterpart, McDonnell Douglas DC-10, can carry almost twice as much fuel as the KC-135. It also can carry up to 170,000 pounds (76,500 kilograms) of cargo, three-fourths as much as the AF's largest cargo plane, the C-5 Galaxy, and twice as much as the C-141 Starlifter.

AFR units have supported worldwide air refueling missions with KC-135s since 1976 and with KC-10s since 1981. More than 3,300 maintenance and operations personnel are assigned to aerial refueling jobs in the AFR.

6. Special Missions: AFR is involved in five special types of missions. Four of those special missions focus on activities having peacetime applications: airborne fire fighting, hurricane surveillance, aerial spray, and rescue.

Fire Fighting: The 731st Airlift Squadron, assigned to the 302nd Airlift Wing, Peterson Air Force Base, CO, is trained in the use of modular airborne fire fighting systems. Their mission focuses on helping fire-fighting efforts of the U.S. Forest Service by dropping retardant chemicals directly onto fires.

Other AFR aircraft shuttle Forest Service personnel and equipment to wild fire areas when the emergency requires a swift deployment to the fire line. This increased fire fighting assets allow more efficient use of Forest Service resources.

Hurricane Surveillance

WC-130 Aircraft: Hurricane Hunters of the AFR's 53rd Weather Reconnaissance Squadron, Keesler Air Force Base, MS, began their humanitarian hurricane surveillance mission in 1976. The WC-130H aircraft are specially modified and equipped to penetrate severe storms to collect meteorological data. The information is then passed to the National Hurricane Center in Miami to assist with predicting storm tracks.

AFRC Hurricane Hunter WC-130H Hercules

C-130H "Spray Bird" from Youngstown ARB, OH spraying pesticide over Marine Corps boot camp on Paris Island, SC

The 53rd has no wartime mission and is part of the AFR. It provides 100 percent of the Department of Defense aircraft weather surveillance capability.

Aerial Spray

C-130 Aircraft: The only unit in the AF capable of aerial spray operations to control disease-carrying pests and insects is the AFR's 910th Airlift Wing, Youngstown-Warren Air Reserve Station, OH. The mission was taken over from the active force in 1973. The aerial spray mission uses a specially configured C-130 Hercules. This is the only fixed wing aerial-spray capability in the Department of Defense.

Although the Department of Defense initiates most of the unit's missions, local, state and other federal agencies also request its services. The most common missions flown are for mosquito, sand flea, and Japanese beetle control. Several states have also requested support to combat grasshoppers and locusts. Aerial spray missions have been flown in Puerto Rico, Panama, Guam and the Azores.

The 910th Airlift Wing has formed an Oil Dispersant Working Group and is working with industry and government agencies to test aerial spray methods for controlling major offshore oil spills in coastal waters of the United States.

Rescue (HH-60G Helicopters and HC-130 Aircraft): The 939th Rescue Wing provides trained combat search and rescue (CSAR) aircrews and weapons systems to support ACC taskings. The wing headquarters is located at the Portland International Airport, OR, and is the parent wing for the rescue group at Portland; a squadron at Davis-Monthan Air Force Base, AZ; and the rescue group at Patrick Air Force Base, FL.

HH-60G's from Reserve 301st Rescue Squadron.

CSAR is a requirement for most military contingency operations. With 29 percent of the AF's HH-60G Pave Hawk helicopters and HC-130 Hercules rescue-configured aircraft in the United States, support from the 939th RQW is in constant demand. Wing crews are trained in day/night, low-level, and over water missions and often use night vision devices to enhance their rescue operations. In addition to its combat mission, the 939th RQW routinely supports Keflavik, Iceland, search and rescue requirements; provides primary rescue support for the NASA Space Shuttle mission and launch support for the Eastern Missile Range at Cape Kennedy; assists drug enforcement agencies in counter drug operations; and is actively involved in civilian peacetime search and rescue within their local regions.

Special Operations (MC-130E/P): The 919th Special Operations Wing, Eglin Auxiliary Field 3, FL, trains in one of the U.S. military's most unusual missions -- special operations. Wing aircraft include MC-130E Combat Talon I aircraft equipped for use in night/adverse weather, low-level, deep-penetration tactical missions. These aircraft have also been modified to conduct air-to-air refueling with special operations helicopters.

MC-130 Aircraft

The wing also flies the MC-130P Combat Shadow aircraft, which have been modified with new secure communications, self-contained inertial navigation, countermeasures systems, and night vision goggle-compatible lighting. The aircraft's primary mission is to conduct single-ship or formation in-flight refueling of special operations helicopters in a low to selected medium-threat environment.

(b) Average Age of Current Equipment: See *Table 2* for a complete listing of the average age of the aircraft fleet.

(c) Compatibility of Current Equipment: As a partner in the AF total force, the majority of AFR aircraft is included in AF aircraft modification programs. Unfortunately, this policy is under severe stress due to the extent of funding cutbacks in the modification programs over the past several years. The AF and the AFR are being forced to make hard choices in which some aircraft receive the modifications while others do not. Until this year, this has meant scaling back AF initiatives and delaying aircraft modifications and upgrades until future years. Although there have been very few programs canceled so far, the pressure on the AF modification program is severe and the delays across the FYDP are the same as program cancellations.

Regardless of the delays, the AFR will strive to maintain full mission compatibility with the Active component. With Congressional funding support, the AFR has been able to continue initiatives in procuring equipment such as the PATS for the F-16 aircraft, Situational Awareness Data Link (SADL), and Electronic Warfare Management Systems for the F-16 and A-10 aircraft, along with the Self Protection System for the HH-60 helicopter. The next essential modification effort for AFR fighter aircraft is to procure a low cost solution of Advanced Color Displays for the A-10 and F-16 fleet.

(d) Maintenance Programs: Reductions in the Active component force structure have resulted in a redistribution of aircraft and equipment to the ARC. Consequently, AFR aircraft and equipment are currently more modern, resulting in greater compatibility with the Active component aircraft and equipment than has been experienced in the past. This trend will be maintained through FY 2000 and well into the near future. It is essential that AFR maintenance requirements and efforts remain prominent throughout the FYDP and beyond to maintain the high level of compatibility and interoperability.

An immediate area of attention for AFR is the delivery of the C-130J aircraft to Keesler Air Force Base, MS. AFR is due to take delivery of its first WC-130J aircraft in FY 1999 and FY 2000. AFR is vigorously developing a C-130J Programming-Plan (P-Plan) in conjunction with the AMC “Tiger Team” and “911 Team” recommendations. The AFR is working very closely with the “Lead Command” for full funding that would include future support and maintenance requirements for C-130J.

The downsizing of the active duty force also means the AFR is now the proprietors of 13 Air Reserve Bases and operating locations that were formerly Active component facilities. These bases are plagued with crucial infrastructure shortcomings in basic telecommunications systems, in air traffic control capabilities, and in base intrusion detection systems. The AFR is not manned at the same full time levels as the former Active component units that occupied these locations. AFR must depend on modern technology systems in communications, intrusion/detection and televideo systems replacing the former manpower used to operate and protect these capital assets. While much of this infrastructure support is being programmed by the Air Force in the out years, the AFR is quite concerned that long delays and obsolete facilities will affect security, efficiency, and morale of units based at these locations.

(e) Modernization Shortfalls: AFR units are equipped, maintained, and ready on a moment's notice. Units are equipped comparably to support the active duty counterparts and perform operationally everyday. As discussed previously, although AFR is not currently facing significant equipment shortages or incompatibility issues, it continues to endure sustainment problems as a result of working with older aircraft and equipment. A modernization program is essential to provide the necessary engineering and upgrades to address long term operational viability.

The current fleet of C-130 aircraft will undergo a long needed Avionics Modernization Program (AMP) upgrade. Under the current plans, the C-130J will replace most of the older C-130E aircraft. All C-130 aircraft with enough service life remaining are programmed for AMP. C-130E aircraft scheduled for AMP will also go through an additional 15 engine and auxiliary power unit (APU) upgrade. Several AFR units will receive the C-130J, while all other C-130 units are programmed for AMP.

The KC-135E fleet is experiencing reliability and sustainability problems, and this mission design series (MDS) aircraft is incompatible with the KC-135R configuration. For instance, the engine system (engines/start carts, etc.) does not meet noise and environmental requirements of the Clean Air Act. The Air Force provided a set of new engine kits in FY 1996 (cost $26M per aircraft). However, 11 AFR KC-135E aircraft require upgrades to the KC-135R configuration. KC-135E modernization is an AFR priority. In addition, AFR fully supports the "Pacer CRAG" KC-135 avionics modernization upgrades.

In addition to the KC-135 modernization shortfall, although not regarded as critical shortfalls, many additional items are considered as needed shortages. These unfunded requirements are listed on page 5-36.

AFR is a full partner in a total AF that knows, utilizes, and supports the capability of its Reserve units. This capability is maintained with strong focus on smart business practices that include commercially developed technologies, rapid prototyping, operational test programs and quick-response acquisition programs to meet critical technological cycle times. The AFR has demonstrated that operational equipment could be procured and improved capabilities could be integrated into the aircraft in less than three years. This is possible due to a combination of the utilization of the civilian skills and business acumen of traditional reservists, the participation in the unique operational test programs at the Air National Guard Air Force Reserve Test Center, and most importantly the annual support from Congress.

The AFR frequently reviews and evaluates foreign technology and their competitive test programs and look to the sister services and to the commercial aviation industry for innovative capabilities. While all of the efforts are based on AF requirements and mission needs, mission compatibility is maintained with the Active component in a continually creative fashion. The trend in FY 1999, based primarily on cut-backs in the modification environment, the additional pressure for AFR is to find the most reasonable shortcuts and low cost solutions possible. The AFR reputation is well-established in this regard, and it is frequently called upon to support the AF in finding the truly low cost technical answer to its equipment and modification needs.

(f) Equipment Readiness: The National Guard Reserve Equipment Appropriation (NGREA) provides the AFR with crucial flexibility to obtain priority improvements for aircraft and equipment items. The impact of these equipment and modification programs allows reserve personnel to maintain full mission compatibility with the AF Active component. With the support of Congress, AFR has not only kept pace with mission requirements, it often leads the way in using commercial technologies to support total the Air Force requirements.

In FY 1999, Congress approved an amount of $20M for the AFR in the NGREA. As a result of this support, the AFR plans to procure a number of major equipment items to be delivered in future fiscal years. They are:

F-16 Precision Attack Targeting System: With the cost-sharing help from Air Combat Command (ACC), AFR was able to initiate a procurement effort of low cost laser-targeting pod for Block 30 F-16 aircraft. This will provide self-lasing, self-designating capability in support of precision munitions delivery missions. Contract award for this procurement effort started in September 1998. The program is progressing on schedule with unit deliveries beginning in January 2000.

A-10 SADL: This requirement is to procure data link radios and install Group A wiring in all AFR A-10 aircraft. This effort will give pilots better battlefield management capability and situational awareness.

Aircrew Life Support Equipment: A combination of life rafts, survival and support equipment was purchased for the KC-135 and C-130 fleet. This will not only enhance aircrew safety and survivability, it will allow AFR, in its tactical airlift role, to be more ready to support the ever increasing Op Tempo.

Night Vision Devices: Helmet mounted passive Night Vision Devices that amplify ambient and near infrared light (allowing aircrew members to operate more effectively at night) are being procured for AFR C-130, HC-130, HH-60G, and B-52 aircrews.

During FY 1999, AFR began taking delivery of the following miscellaneous equipment thanks to funding from the FY 1997 and FY 1998 NGREA appropriation:

A-10 Electronics Warfare Management Systems
C-141 Simulator Upgrade
F-16 Situational Awareness Data Link
KC-135 Inter-phone Replacement
Night Vision Devices
GPN-20 Ground Radar
Flight-line intrusion Detection System

Looking back through recent history, Congressional support has helped bring the AFR mission readiness level to an all-time high. The AFR was able to demonstrate a reliable

partnership with the active AF and Air National Guard counterparts and meet real-time critical challenges. With prior year NGREA funding, essential equipment and capabilities were successfully fielded. Examples of these efforts include:

F-16C/D Countermeasures Management System
A-10 Common Missile Warning System
HH-60G Self Protection System
ALR-69 Radar Warning Receiver for C-130
Aircraft Paint Spray Booth Insert
KC-135 Auxiliary Power Units
C-130H/J Common Spare Equipment

LGB Support Equipment for the F-16: Procurement of support equipment required to provide the AFR fighter units with the capability to carry and deliver GBU-10/12/24 LASER Guided Bombs. There is no excess equipment in the USAF inventory and the AF has no plans to acquire additional testers.

GPS Ground Stations for the WC-130J: SATCOM Ground Stations to support the WC-130J for the 53rd WRS hurricane mission.

HC-130 NVG Compatible Aircraft Lighting System (NCALS): Upgrades HC-130P/N cockpits to the C-130 H3 NVIS compatible lighting standard. This will modify current internal and external lighting systems to allow unrestricted use of night vision goggles (NVGs).

b) Changes Since Last NGRER: The major difference in this report, in comparison to previous reports, is the emphasis of future equipment requirements and the discussions on the modernization shortfalls and issues. In this year's report we portray a story that realistically reflects how the AFR continues to be a vital partner in supporting the AF missions. It discusses proven methodology in acquiring needed equipment and in meeting operational goals. While training and fighting hand-in-hand with the Active component and Guard counterparts, the AFR has made tremendous headway in ensuring compatibility and interoperability of equipment. By replacing older, less capable equipment with far more advanced equipment systems, and through the efficiency of cost management the AFR achieved most, if not all, of its objectives. Fewer redundant operations between AFR and other MAJCOM were also significant factors in improving the ability to train and fight effectively. To maintain pace with the changing global security environment and future world instabilities, however, it is essential to evaluate the true ingredients for modernization in terms of specific equipment needs that would warrant future viability and mission readiness for the AFR.

Within the past two years, the AFR has seen a steady and decreasing trend in NGREA, while the AF increased support for Reserve Component equipment. However, the ever-fast changing Op Tempo places more requirments on the AFR. Presented in the next sections are highlights of the requirement shortfalls and modernization issues that could undermine the AFR's operational edge in the future.

c) Future Years Program (FY 2001 - 2003)

(1) FY 2003 Equipment Requirements: To support the AF in maintaining strong global readiness, AFR recognizes that it must be a ready aerospace power during both peacetime and war. To be an able warfighting and support organization it works very closely with the lead commands to program, plan, and budget for operational requirements and equipment needs. Future year requirements that are part of the AF programming appropriations include traditional efforts of in-service aircraft modifications and procurement of support equipment, ammunition, and other miscellaneous materials.

Chart 1 below illustrates the requirements that were programmed for the AFR by the MAJCOM (source P-1R, February 2000):

Chart 1
Equipment Procurements for FY 2001 to 2003

	FY 2001	**FY 2002**	**FY 2003**
Modifications of In-service Aircraft (Appropriation 3010, Budget Activity 5)	Bombers: B-52 Fighters: A-10, F-16 Transports: C-5, C-141, C-130, KC-135	Bombers: B-52 Fighters: A-10, F-16 Transports: C-5, C-141, C-130, KC-135	Fighters: A-10, F-16 Transports: C-5, C-141, C-130, KC-135
Aircraft Support Equipment and Facilities (Appropriation 3010, Budget Activity 7)	For all aircraft	For all aircraft	For all aircraft
Procurement of Ammunition (Appropriation 3011, Budget Activity 1)	Rockets, Cartridges, Practice Bombs, General Purpose Bombs, Flares	Rockets, Cartridges, Practice Bombs, General Purpose Bombs, Flares	Rockets, Cartridges, Practice Bombs, General Purpose Bombs, Flares
Vehicle Equipment (Appropriation 3080, Budget Activity 2)	Truck fuel tank, Tractor A/C Tow, Tractor flight line tow, dump truck, snow removal equipment, miscellaneous items	Truck fuel tank, Tractor flight line tow, miscellaneous items	Snow removal equipment, miscellaneous items

	FY 2001	FY 2002	FY 2003
Electronics & Telecom Equipment (Appropriation 3080, Budget Activity 3)	COMSEC Equipment, Intel data handling system, theater air control sys, GCCS, Physical Security System, Theater Battle Management, Base Information Infr. Sys, NAVSTAR GPS equipment, miscellaneous items	COMSEC Equipment, Intel data handling system, theater air control sys, GCCS, Physical Security System, Theater Battle Management, Base Information Infr. Sys, NAVSTAR GPS equipment, miscellaneous items	COMSEC Equipment, Intel data handling system, theater air control sys, GCCS, Physical Security System, Theater Battle Management, Base Information Infr. Sys, NAVSTAR GPS equipment, miscellaneous items
Base Maintenance and Support (Appropriation 3080, Budget Activity 4)	Night Vision Goggles, flood lights, miscellaneous equipment	Night Vision Goggles, flood lights, miscellaneous equipment	Night Vision Goggles, flood lights, miscellaneous equipment

Although the Active component has been very generous in providing the much-needed relief, there remain many operational and support issues and requirements unresolved and unfunded. Beside the direct congressional adds allocated within the NGREA, AFR often reached into its internal operating budget to source for these shortfalls, which often resulted in a "rob Peter to pay Paul" situation. But the NGREA, as it is today, is on a downward trend and AFR budget is no bigger than the previous year, making it very difficult to continue to maintain the Ops Tempo and meet modernization requirements.

(2) New Equipment Procurements: The following are planned procurement activities that are deemed necessary by AFR to allow for the replacement of aging, limited, and marginally supportable equipment.

HC-130 NCALS (Night Vision Infrared System Compatible Aircraft Lighting System): Upgrades HC-130P/N cockpits to the H3 NVIS compatible lighting standard. The NVIS lighting system will modify current internal and external lighting systems to allow unrestricted use of night vision goggles (NVGs).

C-141 8.33Mhz ARC 210 Radio: Currently the AFR C-141 fleet does not have the 8.33 Mhz radios which allow unrestricted airspace access and operation in the European theater. This will ensure AFRC to achieve its global mobility capability.

F-16 Color Display: Hi-definition Color Multifunction Displays will enable the F-16 to display more precise, informative pictures thus improving interpretation, advancing situational awareness, and increasing visual accuracy for target recognition with electro-optical weapons and targeting systems.

Scope Shield II Tactical Radio: Replace Scope Shield I (SSI) tactical field radio sets for all AFR Force Protection UTCs. SSII Tactical radios have proven capable of providing adequate and necessary secure communication links during training exercises and contingency operations. These radios are ruggedized for field use but are not nuclear hardened.

ALQ-131 Jamming Pod Data Bus: Modification of the ALQ-131 jamming pods to meet the requirements of MIL-STD-1553 for data bus radio frequency interface. MIL-STD-1553 permits ALQ-131 receiver/processor data to be provided to the cockpit for enhanced situational awareness. This interface is needed to coordinate pod operation with other aircraft equipment.

C-130 H3 ATS -Engineering Changes: The C-130H3 simulator, currently under contract at the Dobbins AFB Eastern Regional Training Center, requires a number of engineering changes prior to fielding to meet airframe currency.

A-10 ADI Replacement: The current A-10 Attitude Directional Indicator has the lowest Mean Time Between Failure (MTBF) of all ADIs--500 hours, and has become reliability & maintainability problem for AFR. This program will provide a replacement for the A-10's main ADI.

HH-60G FLIR Upgrade: Upgrades consists of software and interface circuit board installation on mission essential Forward Looking Infrared imaging system.

A-10 Weather Avoidance System: Provides the A/OA-10 with a weather avoidance capability. This effort includes integration of electronic storm scopes, antenna, master power unit and cockpit controls.

HC-130 Radar Replacement: This effort will replace the APN-59 radar on the HC-130 with the APN-241. The current APN-59 radar system does not meet mission reliability, maintainability, and supportability requirements. In addition, the cost to maintain an antiquated APN-59 system is becoming prohibitive.

(3) Transfer and Withdrawals from AC to RC: As the AFR gains the lead responsibility for all the Special Operations Support including penetration activities and support, it will now own all the MC-130E's (Combat Talon I). The 5th SOS, Eglin Air Force Base, FL, will transfer all of its MC-130P Combat Shadow aircraft and transition to an associate unit with the 9th SOS, an Air Force Special Operations Command active-duty unit. It will in turn receive 6 MC-130Es from the Active component for a total of 14 MC-130Es.

(4) Equipment shortages and modernization shortfalls: In FY 1999 and on an annual basis, the AFR allocates an average of $7.5 million in Operations & Maintenance (O&M) appropriations for the execution of AFR modernization programs and strategic planning efforts. This can be seen as future investments to the AFR apportions to ensure supportability and sustainability for all of its weapon systems. These activities are divided in three distinct areas: Infrastructure, Studies & Analysis, and Engineering efforts.

Infrastructure activities are efforts that require continuous yearly funding which include test facilities, training centers, and contracted technical expertise. It supports the Air National Guard and AFR Test Center (AATC) in Tucson, AZ. AATC is the primary AFR organization to conduct testing on unique weapon systems. Also, funding is provided for the purpose of maintaining an A-10 aircraft deployed to Davis-Monthan AFB, AZ, to support operational test efforts at AATC. As part of the infrastructure support is the technical support required in the form contractor advisory and assistance support at the Air Training Systems Group, Wright-Patterson AFB, OH. This technical advice is for the procurement and acquisition of simulators and trainers for C-130H-3, C-5, and C-141 aircraft. Also here, technical and engineering support is required for the F-16 PATS procurement and fielding activities.

AFR also works closely with the Air Force Research Laboratory (AFRL) and the Air Combat Command's Training Systems Center to provide continued maintenance and upgrade of both software and hardware for the six fielded F-16 Multi-Task Trainers. Work efforts for FY 1999 and future years include integration of the instructor operator stations, threat databases, aircraft Engineering Change Proposals, night vision enhancements, etc. In addition, AFRL provided significant on-site technical support that resulted in the successful delivery of the first C-130 H-2 training system to Niagara Falls ARB, NY. A-10 Unit Training Device was also an effort AFRL was a full partner in providing the technical solution.

The acquisition methodology of the AFR is very similar to that of the AC, with the except that the AC is responsible for all Research and Development funding. Requirements acquisition is broadly categorized into three phases. Phase I, otherwise known as Studies and Analysis. Here the command assesses its mission and identifies deficiencies using the "strategy-to-task" framework. As a result of assessments, analytical studies will be conducted to yield alternate solutions and the best alternative is identified and measured against cost, schedule, and potential capability. In Phase II, Engineering, preferred solutions are selected and integrated into the weapon or support system. This phase may culminate in trial installation, kitproof, or low-rate initial production. Finally, the solution is procured, delivered to the user, and sustained in Phase III, Production, Fielding, and Operational Support. Some low-risk modernization efforts may include engineering, trial installation, and kitproof as part of the production cycle in Phase III.

The following tables represent the studies and engineering activities the AFR plans to conduct in FY 2000:

Phase I (Studies) Prioritization

Description
HH-60 Integrated Cockpit Feasibility Study
A-10 HMCS Operational Assessment *
A-10 Integrated Cockpit Study Phase I *
B-52 Integrated Cockpit Study
F-16/A-10 DMI (Moving Map)
F-16 Upgraded Data Transfer & Recording Study Phase I*
HH-60G Self Protection System TD&E

Phase II (Engineering) Prioritization

Description
A-10 Engine Operational Utility Evaluation (OUE) *
A-10 Digital Stores Management System (ACP/ICU) Phase II*
F-16 Advanced Central Interface Unit (ACIU) Phase II*

(5) Effects On Overall Readiness: The AFR has forces mobilized to support various contingencies worldwide including domestic humanitarian relief missions. There has been no impact on readiness attributable to this mobilization. All of the selective reserve units are fully capable of meeting their required response time of 72 hours. The visible improvement was evident in the seamless integration into the gaining MAJCOMs operational employment. AFR forces are fully integrated into the Global Reach laydown. With the implementation of the 10 Aerospace Expeditionary Forces all of the AFR combat support forces will be continually integrated with Active component forces in meeting the overall operational employment requirements in small scale contingencies in all theaters.

AFR units' combat readiness and mobilization are regularly evaluated in accordance with the Air Force Inspection System. Operational Readiness Inspections (ORI) are accomplished by gaining major commands every four years. The inspections system measures the units' ability to mobilize and deploy, as well as combat readiness. Medical units (previously evaluated by the Air Force Inspection Agency) have now been included in ORI to ensure they meet their wartime taskings. Reserve units meet the same standards and criteria required of an active duty unit.

(6) Other Comments: The implementation of the Expeditionary Aerospace Force (EAF) will be the most dramatic contribution towards involving AFR assets in the beginning stages of contingency planning cycle. The EAF concept will result in AFR assets being identified up to 30 months in advance for integration with active duty. These assets will be used as the primary resources for meeting the theater CINC's planned and crisis response aerospace force requirements.

d) Remaining Shortfalls and Unfunded Requirements: *Chart 2* on the following page highlights the AFR current Prioritized Unfunded Equipment Requirements:

Chart 2

AFR Prioritized Unfunded Equipment Requirements

REQUIREMENT	RWG RANK	Wartime Requirement	Readiness	Lead Cmd Support	O&M Impact	Logistics Impact
HC-130 NCALS (Carry over)	1	Y	Y	Y	Y	Y
C-141 8.33Khz Radio	2	Y	Y	Y	Y	Y
F-16 COLOR DISPLAY (Multi-Year Program)	3	Y	Y	Y	Y	Y
SCOPE SHIELD II TACTICAL RADIOS(Multi Year Program)	4	Y	Y	Y	Y	Y
ALQ-131 1553 DATA BUS	5	N	N	Y	Y	Y
C-130H3 ATS - ENGINEERING CHANGES	6	N	Y	Y	?	?
A-10 ADI REPLACEMENT	7	Y	Y	Y	Y	Y
HH-60 FLIR UPGRADE AND INTEROPERABILITY MOD	8	Y	Y	Y	Y	Y
A-10 WEATHER AVOIDANCE SYSTEM (AWAS)	9	Y	Y	Y	Y	Y
HC-130 RADAR REPLACEMENT	10	Y	Y	Y	Y	Y
B-52 BOMB BAY CAMERA	11	Y	N	Y	Y	Y
F-16 HELMET MOUNTED CUEING (HMCS)	12	Y	N	Y	Y	Y
MOTOR VEHICLES FOR MED UTC's (Multi-Year Program)	13	Y	Y	Y	Y	Y
MC-130E COMBAT TALON I RADAR REPLACEMENT	14	Y	Y	Y	Y	Y
HH-60 FLIGHT ENGINEER'S SAFETY MOD	15	Y	Y	Y	Y	Y
PRECISION LOCATING & ID/ALR-69 (PLAID)	16	Y	?	?	?	?
INTRUSION DETECTION SYSTEM (Multi-Year Program)	17	N	Y	Y	Y	Y
A-10 UTD - ENGINEERING CHANGES (Multi-Year Program)	18	N	Y	Y	N	N
TRUNKED LMR (Multi-Year Program)	19	N	Y	Y	Y	Y
SNOW REMOVAL VEHICLES	20	N	Y	Y	Y	Y
FLIGHTLINE VSS (Multi-Year Program)	21	N	Y	Y	Y	Y
UTILITY TRUCK (4X4)	22	N	Y	Y	Y	Y
TRUCK TRACTORS	23	N	Y	Y	Y	Y
C130 CARRY-ON SADL (Multi Year Program)	24	N	Y	Y	Y	Y
KC-135 ENGINE KITS (3010)	25	Y	Y	Y	Y	Y

(e) Summary: AFR has come a long way with the help of the Active component and Congress in obtaining the much-needed operational equipment and combat essential items. Through the hard work and dedication of AFR men and women, reserve personnel participate in real-time contingencies as a critical partner of the AF. To ensure a sharp and ready edge, the AFR plans, programs, and facilitates its equipment requirements within the AF budget. AFR requirements are presented, analyzed, and advocated for under the same process used by the AF. In addition, the AFR utilizes its internal Requirements Review process to further prioritize, validate, and source for the additional unfunded requirements.

As a result of better planning and execution, AFR, more than ever before as a MAJCOM, operates and displays great combat effectiveness through the procurement of not only equipment but also with sustained logistical support and maintenance supportability. It engages in vigorous modernization efforts to provide newer and more compatible equipment.

The AFR steadfastly upholds the core values of Integrity First, Service Before Self, and Excellent In All We Do as the standards and pride in serving this great nation.

Table 1

USAFR
Consolidated Major Item Inventory and Requirements

NOTE: This table provides a comprehensive list of selected major items of equipment. It provides the quantity on-hand (QTY O/H) projected to be in the inventory at the beginning/end of the selected fiscal year (FY). It also provides the quantity required (QTY REQ) needed to meet full wartime requirements of the Reserve component. In accordance with Title 10, the QTY REQ number provides the recommendation as to the quantity and type of equipment which should be in the inventory of each Reserve component.

NOMENCLATURE	*EQUIP No.*	*Beginning FY 2001 COST*	*Beginning FY 2001 QTY O/H*	*Beginning FY 2002 QTY O/H*	*Beginning FY 2003 QTY O/H*	*Ending FY 2003 QTY O/H*	*Ending FY 2003 QTY REQ*
FIGHTER,A-10A	A-010A	9,970,000	24	24	24	24	**24**
BOMBER,B-52H	B-052H	57,160,000	8	8	8	8	**8**
AIRLIFT,C-5A	C-005A	137,760,000	28	28	28	28	**28**
AIRLIFT,C-130E	C-130E	11,140,000	28	28	28	28	**28**
AIRLIFT,C-130H	C-130H	37,400,000	76	76	76	76	**76**
AIRLIFT,C-141C	C-141C	45,180,000	40	40	40	40	**40**
FIGHTER,F-16C	F-016C	15,910,000	56	56	56	56	**56**
FIGHTER,F-16D	F-016D	15,910,000	4	4	4	4	**4**
RESCUE,HC-130N	HC-130N	14,000,000	4	4	4	4	**4**
RESCUE,HC-130P	HC-130P	13,360,000	4	4	4	4	**4**
RESCUE,HH-60G	HH-060G	11,500,000	21	21	21	21	**21**
AIR REFUELING,KC-135E	KC-135E	35,000,000	16	16	14	10	**12**
AIR REFUELING,KC-135R	KC-135R	57,690,000	48	50	52	56	**54**
SPECIAL OPS,MC-130E	MC-130E	35,300,000	9	14	14	14	**14**
AIR SUPPORT,OA-10A	OA-010A	9,970,000	21	21	21	21	**21**
WEATHER SVC,WC-130H	WC-130H	13,360,000	9	7	5	1	**3**
WEATHER SVC,WC-130J	WC-130J	16,800,000	0	1	3	7	**5**

Table 2

USAFR
Average Age of Equipment

NOTE: This table provides the average age of selected major items of equipment. Since equipment is normally procured over several years, the average age provides a projected average age of the fleet for budget year (BY) 2001.

NOMENCLATURE	***EQUIP No.***	***AVERAGE AGE***	***REMARKS***
FIGHTER,A-10A	A-010A	20	
BOMBER,B-52H	B-052H	38	
AIRLIFT,C-5A	C-005A	31	
AIRLIFT,C-130E	C-130E	36	
AIRLIFT,C-130H	C-130H	10	
AIRLIFT,C-141C	C-141C	34	
FIGHTER,F-16C	F-016C	13	
FIGHTER,F-16D	F-016D	13	
RESCUE,HC-130N	HC-130N	30	
RESCUE,HC-130P	HC-130P	35	
RESCUE,HH-60G	HH-060G	9	
AIR REFUELING,KC-135E	KC-135E	41	
AIR REFUELING,KC-135R	KC-135R	39	
SPECIAL OPS,MC-130E	MC-130E	35	
SPECIAL OPS,MC-130P	MC-130P	32	
AIR SUPPORT,OA-10A	OA-010A	20	
WEATHER SVC,WC-130H	WC-130H	34	

USAFR
Service Planned Procurments (P-1R Data)

NOTE: This table identifies the dollar-value of equipment programmed to be procured with Service procurment funds as identified in the P-1R exhibit of the President's budget. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 2001*	*FY 2002*	*FY 2003*	*REMARKS*
B-52	7,000,000	4,500,000		
A-10	6,500,000	2,500,000	3,100,000	
F-16	6,100,000	5,900,000	4,900,000	
C-5	27,500,000	32,500,000	28,500,000	
C-141	500,000	500,000	500,000	
C-130	25,900,000	18,000,000	25,800,000	
C-135	18,100,000	7,000,000	4,500,000	
AIRCRAFT SPARES/REPAIR PARTS	*			
AIRCRAFT SUPPORT EQUIPMENT & FACILITIES	12,900,000	13,300,000	13,700,000	
TRUCK MULTI-STOP 1 TON 4X2	1,600,000	1,100,000	100,000	
ITEMS LESS THAN $5,000,000	200,000	1,000,000	2,100,000	
ITEMS LESS THAN $5,000,000	100,000	300,000	1,000,000	
ITEMS LESS THAN $5,000,000	400,000	200,000		
TRUCK, DUMP	100,000	100,000	*	
ITEMS LESS THAN $5,000,000	100,000	100,000	100,000	
COMSEC EQUIPMENT	1,400,000	1,400,000	1,400,000	
NATIONAL AIRSPACE SYSTEM	1,600,000	4,100,000	5,400,000	
THEATER AIR CONTROL SYS IMPROVEMENT	1,900,000	1,900,000	1,900,000	
AF GLOBAL COMMAND & CONTROL SYS	900,000	900,000	900,000	
AIR FORCE PHYSICAL SECURITY SYSTEM	700,000	700,000	700,000	
BASE LEVEL DATA AUTO PROGRAM	100,000	100,000		
THEATER BATTLE MGT C2 SYS	1,500,000	1,500,000	1,500,000	
BASE INFORMATION INFRASTRUCTURE	4,700,000	4,100,000	1,700,000	
NAVSTAR GPS SPACE	300,000	300,000	300,000	
COMBAT SURVIVOR/EVADER LOCATOR RADIO			200,000	
ITEMS LESS THAN $5,000,000	200,000	200,000	200,000	
BASE/ALC CALIBRATION PACKAGE	*			
ITEMS LESS THAN $5,000,000	300,000	500,000	500,000	
NIGHT VISION GOGGLES	200,000	100,000	100,000	
ITEMS LESS THAN $5,000,000	800,000	200,000	200,000	
MECHANIZED MATERIAL HANDLING EQUIP		200,000		
ITEMS LESS THAN $5,000,000	500,000	300,000	400,000	
FLOODLIGHTS	400,000	200,000	200,000	
ITEMS LESS THAN $5,000,000	*	200,000	200,000	
BASE PROCURED EQUIPMENT	3,000,000			
PHOTOGRAPHIC EQUIPMENT	300,000	300,000	200,000	
AIR CONDITIONERS	600,000	200,000	100,000	
ITEMS LESS THAN $5,000,000	1,200,000	800,000	800,000	
TOTAL PROCUREMENTS FOR THE USAFR	**127,600,000**	**105,200,000**	**101,200,000**	
* ITEMS UNDER $50,000				

USAFR

National Guard and Reserve Equipment Appropriation (NGREA) Procurements

NOTE: This table identifies the dollar-value of equipment programmed to be procured with National Guard and Reserve Equipment Appropriations (NGREA). These funds are available for a three year period from the year of appropriation. Deliveries of procured equipment normally take one to two years before they arrive in the inventory.

NOMENCLATURE	*FY 1998*	*FY 1999*	*FY 2000*	*REMARKS*
C-5 Simulator	28,200,000			
GPN-20 Radar System	600,000			
KC-135 Interphone Replacement	5,700,000			
Night Vision Devices	3,800,000			
Flightline Intrusion Detection System	1,200,000			
A-10 Unit Training Device-ECPs	1,300,000			
Snow Removal Vehicles	2,600,000			
CCTV Flightline Video Surveillance System	800,000			
Aircrew Life Support Equipment	300,000	600,000		
A-10 Unit Training Device	3,000,000			
Scope Shield II Tac Radios	1,100,000		2,000,000	
HH-60G SPS Modification	300,000			
ALQ-131 Engineering (and Misc Equi)	300,000		700,000	
F-16 Precision Attack Targeting System		13,000,000		
A-10 SADL		2,400,000		
C-130J SATCOM Ground Station		1,200,000		
F-16 LGB Support Equipment		800,000		
C-130 Night Vision Cockpit		2,000,000	1,300,000	
C-141 8.33 Khz Radios			2,000,000	
F-16 Color Displays			3,600,000	
C-130 H3 ATS - ECP			1,000,000	
A-10 ADI			1,270,000	
HH-60 FLIR			1,700,000	
A-10 AWAS			600,000	
HC-130 Radar Replacement			5,730,000	
Total US Air Force Reserve	**49,200,000**	**20,000,000**	**19,900,000**	

Table 5

USAFR
Projected Equipment Transfer/Withdrawal Quantities

NOTE: This table portrays the planned equipment transfers (Active to Reserve), withdrawals (-), and decommissioning (-). Transfers are commonly called "cascaded" equipment or equipment that is provided to the RC once the Active receives more modern equipment items. Although this table highlights a three-year period, many Services do not know exact quantities of transfers or withdrawals until year of execution, due to the uncertainty of the procurement/delivery cycle of new equipment.

NOMENCLATURE	***EQUIP No.***	***FY 2001 QTY***	***FY 2002 QTY***	***FY 2003 QTY***	***REMARKS***
SPECIAL OPS,MC-130E	MC-130E	5			Modernization of MC-130P
WEATHER SVC,WC-130H	WC-130H	-2	-2		Modernizing to WC-130J
WEATHER SVC,WC-130J	WC-130J	1	2		Modernization
AIR REFUELING,KC-135R	KC-135R	2			Modernization

USAFR
FY 1999 Planned vs Actual Procurements and Transfers

This table compares what the Services planned to procure and transfer to the RC in FY 1999 with actual procurements and transfers. Since the procurement cycle is normally one to two years from funding to delivery, this table identifies only what has been delivered in FY 1999.

Nomenclature	*Equip No.*	*FY 99 Transfers*		*FY 99 Procurements*		*FY 99 NGREA*		*Remarks*
		Planned	*Actual*	*Planned*	*Actual*	*Planned*	*Actual*	
AIRLIFT,C-130H	C-130H		4					Increase in requirements
RESCUE,HC-130P	HC-130P		-1					Aircraft destroyed
SPECIAL OPS,MC-130E	MC-130E	1	1					Modernization
SPECIAL OPS,MC-130P	MC-130P		-4					Modernizing to MC-130E
WEATHER SVC,WC-130H	WC-130H		-1					Modernizing to WC-130J
WEATHER SVC,WC-130J	WC-130J	1	0					Delay in planned delivery
AIR REFUELING,KC-135E	KC-135E		-2					Conversion to KC-135R

USAFR Major Item of Equipment Substitution List

NO DATA AVAILABLE

Chapter 6
United States Coast Guard Reserve

I. Coast Guard Overview

a) Overall Coast Guard-wide planning guidance: The US Coast Guard, one of the five military services of the Armed Forces, is a unique and extremely valuable instrument of national security. As a military, multi-missioned, maritime service within the Department of Transportation, the Coast Guard's fundamental roles are to protect the American public, the environment and US economic and security interests in both US waters and on the high seas. Because the Coast Guard is both a maritime law enforcement agency and a military service, it provides unique capabilities and a complementary role that continues to be increasingly relied upon by the Service Chiefs and the Unified Commanders in Chief (CINCs).

A Memorandum of Agreement (MOA) between the Department of Defense and the Department of Transportation entitled "Use of US Coast Guard Capabilities and Resources in Support of the National Military Strategy" was signed by the Secretary of each Department on October 3, 1995. This MOA identifies the national defense missions for the Coast Guard, among them the mission of Port Operations, Security and Defense (POSD). Primarily an anti-terrorism and force protection mission, POSD is conducted at the domestic Sea Ports of Embarkation (SPOE) and the overseas Sea Ports of Debarkation (SPOD) to ensure critical ports and harbors are free of hostile threats, terrorist actions and safety deficiencies.

POSD is based on the doctrine of port security developed by the Coast Guard to provide waterborne and limited land-based protection for shipping and critical port facilities during a military operation. Thus, POSD constitutes a center of gravity for both Major Theater War operations (MTW) and military operations other than war (MOOTW) (contingency operations). The lack of a port security capability was noted in lessons learned from Operations PROVIDE RELIEF/RESTORE HOPE (Somalia). In these types of operations, upwards of 90 percent of logistics sustainment for US or allied forces passed through coastal ports and thus was potentially vulnerable to hostile actions.

b) Equipping Policy for the Coast Guard Reserve: Unique to the Coast Guard is a provision of law, found at Title 14, USC, section 712, which allows the Secretary of Transportation to involuntarily recall Coast Guard reservists to augment Active component (AC) units in the event of a natural or man-made disaster. Equipment for these types of events or for normal operational surges is provided by Active Coast Guard units from existing unit inventory, from supporting units, or through contemporaneous procurement.

Equipment for domestic mission support is provided for within the DOT budget. The Department of Defense funding provides the equipment necessary for the Coast Guard to perform its defense responsibilities. This includes weapons systems aboard cutters, as well as communications systems that allow Coast Guard vessels to be

interoperable with the U.S. Navy and allied fleets during joint operations. Additional items of military equipment for use in a combat zone are required for Port Security Units (PSUs), Harbor Defense Command Units (HDCUs), and Mobile Support Units (MSUs). These items include small highly maneuverable, well-armed Transportable Port Security Boats (TPSBs), specialized uniforms, personnel communications equipment, tents and vehicles. In addition to procurement funds to capitalize major equipment items (e.g., small boats) the Coast Guard will need resource support for sustainment funding over the long-term for the deployable Coast Guard Reserve PSUs.

Because some reservists mobilize individually at AC commands, and others mobilize as members of established units (PSUs, HDCUs, MSUs), the Coast Guard has two distinct equipping requirements, one for domestic emergency response, and the other for military contingency operations. In addition to the requirements for Naval Coastal Warfare (NCW) expeditionary operations, the Coast Guard has domestic military responsibilities relating to port safety and security, load-out of military cargo at Strategic SPOE and response to Weapons of Mass Destruction (WMD) incidents. While Coast Guard CONUS responsibilities under POSD are still being defined, force protection of high value assets and critical ports will become a major requirement.

c) Plan to Fill Mobilization Requirements: The training employment of Coast Guard reservists, other than those assigned to the deployable units, is through direct augmentation of active component units using equipment in the Active unit inventory. The deployable units include six PSUs, nine HDCUs and one MSU. These deployable units are comprised of Selected Reserve personnel who may be involuntarily called to active duty. They train and mobilize as units.

Under Title 10, USC, section 12304, Order to Active Duty Authority, Coast Guard reservists may be mobilized when the President determines that it is necessary to augment active forces for any operational mission. Upon full mobilization under Title 10, USC, section 12301, approximately 15 percent of the Coast Guard Selected Reserve would be assigned to deployable PSUs, HDCUs, and MSUs. The remainder would mobilize to augment active component Coast Guard units at strategic US ports, to conduct port safety/security functions.

d) Current Coast Guard initiatives affecting RC equipment: Normally, for peacetime training, Coast Guard Reserve personnel utilize equipment already available at AC units. This is in keeping with the fundamental Service approach under which SELRES personnel are assigned to active component units to train and augment while performing day-to-day Coast Guard missions. Selected Reserve personnel constitute nearly 20 percent of the uniformed Coast Guard strength and are a critical asset to active component units as round-out personnel for peacetime operational missions, as well as surge resources for natural or man-made disasters.

PSUs, HDCUs, and MSUs are traditional drilling units for which there are no active component counterparts. The Coast Guard, through normal procurement

procedures, has provided individual equipment that fills some of the requirements in the Tables of Equipment (TOE) for these units.

e) Plan to Achieve Compatibility with AC: Coast Guard reservists are fully integrated in the active commands. Reservists are assigned to AC units to train and augment while performing day-to-day Coast Guard missions.

II. Coast Guard Reserve Overview

a) Current Status of the Coast Guard Reserve

(1) Harbor Defense Command Units (HDCU) perform command and control for harbor defense and port security outside the continental United States in support of a CINC. These forces, among the first to arrive, are deployed during the earliest stages of a contingency to provide safe and secure ports for off-loading of troops and equipment into a military theater of operations.

Each HDCU is actually a blend of approximately 35 Coast Guard Reserve and Naval Reserve personnel. They act as the command and control element for POSD overseas. The commanding officer may be a member of the U.S. Coast Guard Reserve or the U.S. Naval Reserve. The HDCU has command and control over all Naval Coastal Warfare (NCW) operating units for the mission, including Coast Guard PSUs, and Explosive Ordnance Disposal Units (EOD), Mobile Diving and Salvage Units (MDSU), Inshore Boat Units (IBU) and Mobile Inshore Undersea Warfare Units (MIUW) from the USNR.

(2) Coast Guard Port Security Units (PSU) provide the teeth of the deployed mission. Each PSU operates seven TPSBs. They arrive in theater with their own unit maritime security capabilities. In the Persian Gulf War, self sufficient PSUs were among the few rear-echelon units deployed. A Coast Guard PSU was also placed on alert in 1998 for Operations DESERT THUNDER and DESERT FOX under a Presidential Reserve Call-up (PRC). PSUs continue to participate in numerous annual joint training exercises. In 1999 these exercises included OPERATION FOAL EAGLE, OPERATION BRIGHT STAR, OPERATION SHIELDED SHOCK, OPERATION SEAHAWK and RIVERINE INTEROPERABILITY EXERCISE (RIOEX).

(3) The Mobile Support Unit (MSU) is an expeditionary unit equipped to provide hull, mechanical, and electrical (HM&E) logistics support to forward deployed Coast Guard 110' Patrol Boat (WPB) squadrons. To date, the MSU has proven its value for many peacetime, coastal defense and port security missions including counter narcotics and alien migrant interdiction, in addition to other surge operations.

(4) Weapons of Mass Destruction Response Capability: The Coast Guard is capable of responding to a WMD incident in two significant ways. First, Coast Guard On Scene Commanders (OSCs) can respond at the local level under the direction of EPA or FEMA as per Emergency Support Function (ESF) #10 of the Federal Response Plan and the National Contingency Plan. The OSCs will provide command and control but will not be in a position to provide Coast Guard first responders. Second, the Coast Guard's National Strike Force has the capability, in its three Strike Teams (each consisting of approximately 40 reservists and 45 active duty personnel) to respond to chemical incidents. Strike Teams have been deployed in this capacity in Atlanta and Denver in support of special events. The relationship of the FBI as lead agency for crisis management and FEMA as lead agency for consequence management of a terrorist attack

is outlined in Presidential Decision Directive (PDD) 39. The Coast Guard is currently participating in a working group which is developing a Concept of Operations Plan to coordinate the execution of response activities among Federal agencies in the event of a WMD incident.

b) Major Changes Since Last Report: Since publication of the last National Guard and Reserve Equipment Report, the Coast Guard has received full funding to equip PSUs during FY 1998 and FY 1999. Three additional PSUs were commissioned during FY 1998 and FY 1999. These are PSU 308 in Gulfport, Mississippi; PSU 313 in Tacoma, Washington and PSU 307 in St. Petersburg, Florida. The three new units participated in their first domestic joint operation during FY 1999. It is anticipated that PSU 308, 313 and 307 will become fully operational for worldwide deployment during FY 2000.

c) Future Years Program: Current CINC operational plans validate a requirement for all the HDCUs and PSUs that are currently available. All nine HDCUs are organized and trained, albeit with very limited amounts of equipment. A total of five are located on the Atlantic and Gulf coasts; four are located on the Pacific Coast.

Three PSUs were commissioned in 1995: PSU 305 at Fort Eustis, Virginia; PSU 309 in Cleveland, Ohio; and PSU 311 in Long Beach, California. Most of their individual equipment has been assembled and these three PSUs are fully functional units.

Currently, the Coast Guard has one MSU. Stand-up of a second MSU Reserve Unit has been a frequent active duty request, however, no funds have been appropriated to date.

Because current CINC OPLANS call for the deployment of all the PSUs, the Coast Guard will request funding to fully outfit and equip two more PSUs in FY 2002 to respond to domestic port security and safety contingency operations. As part of the Coastal Defense and Port Security initiatives to better safeguard our nation's ports and borders from both transnational and asymmetric warfare threats, the Coast Guard must expand its domestic POSD capabilities to better respond to this increased risk to national security. The Coast Guard is responsible and has the necessary core competencies for coastal security and protection of the critical ports, waterways and coastal areas. By creating two more PSUs, the Coast Guard would then become more capable or responding to these domestic threats to our nation's critical ports and waterways.

TPSBs are the primary tools that PSUs employ to conduct their mission in support of CINC requirements. FY 1998/99 funding was used to replace the current inventory of TPSBs, which have exceeded their useful service life, and to procure similar equipment for the three new PSUs. It is anticipated, given the approximate eight to ten year life expectancy of these TPSBs, that the Coast Guard would request funding in FY 2005 to recapitalize the 44 TPSBs assigned to the six existing PSUs and the Port Security Unit Training Detachment (PSU TRADET) at Camp Lejeune, North Carolina.

d) Shortfalls

(1) Port Security Unit Strength: In The Persian Gulf War, 100 percent of the Coast Guard PSU capability was deployed, leaving no backup for normal rotation of personnel/units, or replacement equipment. Despite the considerably smaller scale of Operation UPHOLD DEMOCRACY in Haiti, PSU requirements were such that 50 percent of Coast Guard capabilities were deployed for security operations. Based on current requirements the Coast Guard should have more than six PSUs for world-wide deployment.

(2) Port Security Unit Equipment: The Coast Guard has identified requirements for miscellaneous equipment sets for special port security operational functions. These sets include equipment for force protection such as safety, intelligence, communications, medical, CBR equipment, personnel support facilities (tents, field kitchens, ADP equipment, MREs, etc.) and associated equipment maintenance. However, to fully outfit two new PSUs in support of the POSD initiatives in both CONUS and OCONUS, the Coast Guard requests $6.8 million. This is further broken down in the following table with $2.89 million to buy and fully equip 14 more TPSBs and $3.43 million for PSU non-major items for these two new PSUs. Also, there is a request for $720 thousand for HDCU non-major items.

(3) Chemical. Biological and Radioactive Equipment: CBR equipment on-hand for Coast Guard Reserve personnel assigned to the Marine Safety Offices (MSOs) who have a DoD Strategic load-out responsibility are drastically below requirements. During a military load-out contingency, the current mobilization requirements call for in excess of 3500 reserve personnel. In order for the Coast Guard to meet their CONUS Strategic Load-out port commitments, a substantial stocking of Biological/Chemical Mission Oriented Protective Posture (MOPP) gear is required for this force of 3500 personnel.

Additionally, CBR equipment for nine HDCUs and two NCW Groups is also below requirements. MOPP gear is required to outfit this force to meet their requirements. The chart below depicts the total of all current shortfalls.

Nomenclature	Cost	QTY REQ End FY 2003	Total Cost
EQUIPMENT OUTFITTING /2 PSU'S			
Special Interest Equip/TPSB			
25' TPSB (Boat) & boat outfitting	80,714	14	1,130,000
175 hp Outboard Motors	9,000	40	360,000
Vehicle, F350 Pickup	45,000	6	270,000
Vehicle, F550 Stake-bed	45,000	2	90,000
Radio, Tri-band, per Boat/6 spears	35,000	20	700,000
Radio, VHF/FM Spectra	7,000	20	140,000
Radio, Tri-band, Base	33,333	6	200,000
Sub-Total Special Interest Equip			**$2,890,000**

Nomenclature	Cost	QTY REQ End FY 2003	Total Cost
NON MAJOR ITEMS			
Security Outfit	10,000	2	20,000
Night Vision Device	4,000	30	120,000
Generator, 15KW and Distrib Panel	50,000	4	200,000
Generator, 3KW and Distrib Panel	50,000	4	200,000
Medical Deployment Kit	40,000	2	80,000
NBC Equipment Kit	37,500	2	75,000
Administration Support Kit	10,000	2	20,000
Outfitting CUU/782 Gear (140 mbr/PSU)	390,000	2	780,000
PSU Tent Outfit	45,000	2	90,000
Field Kitchen	10,000	2	20,000
Computers, Rugged Laptop	7,500	10	75,000
ISU 90 Containers	10,000	20	200,000
Forklifts	60,000	2	120,000
Handheld VHF/FM DES	2,000	50	100,000
Water Buffalo	15,000	2	30,000
ENG Work Shop	20,000	2	40,000
Van, 16-passenger	50,000	2	100,000
Misc. Tools	25,000	2	50,000
CBR Gear	200,000	2	400,000
Weapons, Gun Mounts/M240	12,500	32	400,000
Command & Control	100,000	2	200,000
Dry-Suits/Mustang Exposure Suits	55,000	2	110,000
Sub-Total PSU Non Major			**$3,430,000**
Total PSU costs			**$6,320,000**
PERSONAL GEAR OUTFITTING 9 HDCU'S & 2 NCW GROUPS=11			
HDCU CBR Gear	27,273	11	300,000
HDCU CUU/728 Gear	38,182	11	420,000
Sub-Total HDCU non major costs			**$720,000**
PSU/HDCU/NCW GROUP TOTAL COST			
Mask, Mark 40 A-1	300	3600	1,080,000
CBR Protective Gear (MOPP-suit, gloves, boots)	230	7200	1,656,000
Canister, CBR Mask Mark 40 A-1	8	7200	57,600
Kits, CBR antidote	82	3600	295,200
Decon Kits, CBR personnel type	13	3600	46,800
Sub-Total			**43,135,600**
TOTAL			**$10,175,600**

(4) Mobile Support Unit Equipment: Current MSU equipment shortfalls include a tractor-trailer truck, connex box trailer, pick-up truck, forklift, generator set, tools, and computer and communications hardware. During FY 2001, the unit will need to modernize the medium sized trucks and trailers. The chart below shows the total requirement.

Nomenclature	Number	Total Required Cost
Truck, Tractor Trailer	1	$105,000.00
Trailer, CONNEX Box	1	$30,000.00
Truck, Pick-Up	1	$25,000.00
Forklift, 10,000 LB	1	$20,000.00
Generator Set 160KW w/ Spare Parts Kit		$23,000.00

Nomenclature	Number	Total Required Cost
Welder, Gas Powered	1	$3,000.00
Computer Hardware		$18,000.00
Equipment, General		$14,000.00
General Use/Consumable Items (GUCL)		$5,000.00
TOTAL		**$419,500.00**

e) Summary and Conclusion: The challenge for the Coast Guard in the future is to improve its capabilities to meet national security requirements while optimizing its resources. Having the right equipment on hand for the Coast Guard men and women to do the job safely and effectively is the challenge in this resource deficient climate. The Coast Guard has maximized its streamlining effort by optimizing its personnel resources through integration of the reserve force with the active force.

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DETAILED LIST OF EQUIPMENT SUBMISSIONS PURSUANT TO CONGRESSIONAL DIRECTION IN TITLE 10 USC SECTION 10543(C)
($ Millions)
(Submitted to Congress on April 7, 1999)

EQUIPMENT	QUANTITY	COST / ITEM	TOTAL COST
ARMY NATIONAL GUARD			
Multiple Launch Rocket system (MLRS)	4	9.250	37.000
Tractor Full Tracked Low Speed T9	26	0.250	6.500
Roller Vibratory	83	0.066	5.550
AVLB Mods (upgrade hydraulic and electric subsystems)	2	0.750	1.500
AVLB (upgrade AVLB to Military Load Class 70)	10	0.200	2.000
Grader, MTZD Heavy	27	0.316	8.552
TOTAL			**61.102**
ARMY RESERVE			
Roller Vibratory	36	0.066	2.400
M9 Combat Earth Mover	12	1.121	13.455
TOTAL			**15.855**
NAVAL RESERVE			
CH-60 HELICOPTERS	1	19.000	19.000
EXPEDITIONARY WARFARE FORCES / COASTAL WARFARE	-		1.100
TOTAL			**20.100**
MARINE CORPS RESERVE			
F/A-18 Modification - Engineering Change Proposal (ECP) 583			20.000
CH-53E Helicopter Night Vision System (HNVS)	12	0.775	9.300
NBC EQUIPMENT	-		1.600
KC-130T Avionics Upgrade	1	16.800	16.800
Common End User Equipment	550	0.004	2.200
Container Handler, Rough Terrain	2	0.500	1.000
AN/PSC-5 Channel Tactical Satellite Terminal	11	0.038	0.423
Night Vision Goggle O&I Level Support Equipment	-		0.127
AH-1W Night Targeting System (NTS) Kits	3	0.750	2.250
AN/AAS-38 Forward Looking Infrared (FLIR)	4	2.425	9.700
TOTAL			**63.400**
AIR NATIONAL GUARD			
F-16 Precision Attack Targeting System (PATS)	120	1.500	180.000
F-15 Fighter Data Link (FDL) (Link 16 compatability)	69	0.250	17.100
F-16 Situation Awareness Data Link (SADL) -(Display upgrades only)	347	0.075	26.020
Tactical Air Control Party(TACP) Air support Ops Sqd. (ASOS) Equip.	4	2.070	8.300
220E Engine Kits (F-16, F-15)	29	1.500	43.500
ALQ-184 Reprogrammable Low Band mod for F-16/A-10 jammer pods	13	0.060	0.780
TOTAL			**275.700**

DETAILED LIST OF EQUIPMENT SUBMISSIONS PURSUANT TO CONGRESSIONAL DIRECTION IN TITLE 10 USC SECTION 10543(C)
($ Millions)
(Submitted to Congress on April 7, 1999)

EQUIPMENT	QUANTITY	COST / ITEM	TOTAL COST
AIR FORCE RESERVE			
F-16 Cockpit Digital Multifunction Display (color)	36	0.100	3.600
F-16 SADL "D" Model Intergration	3	0.290	0.880
Scope shield II Tac Radios (MY)	40	0.290	4.000
C-130 H2/H3 ATS Sim-Engineer changes (MY)	1	1.000	1.000
Night Vision Goggles,HC-130,HH-60,C-130,A-10,F-16,B-52 (MY)	257	0.007	1.930
HH-60G Forward Looking Infrared System	23	0.740	1.700
A-10 Severe Weather Avoidance System	52	0.010	0.600
Motor Vehicles, Med UTC (MY)	14	0.060	0.850
MC-130, Combat Talon, Radar Replacement, Low Prob Intercept	9	0.770	7.000
HH-60G Flight Engineer Safety Mod	23	0.030	0.670
Intrusion Detection System	3	0.380	1.150
A-10 UTD ECPs (MY)	4	0.375	1.500
Trunked Land Mobile Radio (West, Gen Mitchell, Homestead, Carswe	4	0.850	3.430
Snow Removal Vehicles (MY)	15	0.165	2.480
Flightline Video Surveillance System	2	0.350	0.710
Utility Trucks (4x4) (MY)	10	0.020	0.240
Truck Tractors (MY)	8	0.080	0.610
HC-130 Conversion	1	7.000	7.000
C-130 ALR-69 Radar Warning Receiver	8	0.420	3.360
HC-130 EW Mgt. System (ALE-47,integrate AAR47 MWS, ALR-69 RV	8	0.125	1.500
C-130H3 Unit Training Device (UTD)	1	8.000	8.000
KC-135 Reengine Kits	2	30.000	60.000
TOTAL			**112.210**

Appendix C
Acronym Glosssary

Acronym	Nomenclature	Service
AAO	Approved Acquisition Objective	M
AAV	Assault Amphibian Vehicle	M
ABCS	Army Battle Command System	A
AC	Active Component	All
ACC	Air Combat Command	AF
ACE	Armored Combat Earthmover	A
ACTS	Air Combat Training System	AF
ADA	Air Defense Artillery	A
ADP	Automated Data Processing	M
ADRS	ARNG Division Redesign Study	A
ADSW	Active Duty for Special Work	A
ADT	Active Duty for Training	A
AE	Aeromedical	AF
AEF	Aerospace Expeditionary Force	AF
AEP	Army Equipping Policy	A
AETC	Air Education and Training Command	AF
AF	Air Force	AF
AFIST	Abrams Full-Crew Interactive Simulator Trainer	A
AFMS	Air Force Medical Service	AF
AFRC	Air Force Reserve Command	AF
AFRL	Air Force Research Laboratory	AF
A-GCCS	Army Global Command and Control System	A
AIM9X	Air Intercept Missile (9X Series)	AF
AIP	Anti-Surface Warfare Improvement Program	N
AIT	Automated Identification Technology	A
AKITS	Alpena Kadena Interim Training System	AF
ALIC	Airborne Launcher Interface Computer	AF
AMC	Air Mobility Command	AF
AMCM	Airborne Mine Countermeasures	N
AMP	Avionics Modernization Program	AF
AMRAAM	Advanced Medium Range Air-to-Air Missile	AF, N
AMSA	Area Maintenance Support Activities	A
AMSS	Army Materiel Status System	A
ANG	Air National Guard	AF
APN	Aircraft Procurement - Navy	N
ARC	Air Reserve Component	AF
ARNG	Army National Guard	A
ASAS	All Source Analysis System	A
AT	Annual Training	A
ATCCS	Army Tactical Command and Control System	A
ATEC	All Terrain Crane	A
ATLAS	All Terrain Lifter Articulated System	A
ATLASS	Asset Tracking Logistics and Supply System	M
AVLB	Armored Vehicle Launched Bridges	A
BES	Budget Estimate Submission	A
BFV	Bradley Fighting Vehicle	A
BLOS	Beyond Line-of-Sight	AF
BOIP	Basis of Issue Plan	A
BPC	Battle Projection Centers	A
BY	Budget Year	All

Appendix C
Acronym Glosssary

Acronym	Nomenclature	Service
C2	Command and Control	A
C4	Command, Control, Communication and Computers	A
C4ISR	Command, Control, Communication, Computers, Intelligence, Surveilance and Reconnaisance	N
CA	Civil Affairs	A
CAF	Combat Air Force	AF
CAM	Chemical Agent Monitors	A
CAVTR	Color Airborne Video-Tape Recorder	AF
CB	Construction Battalion (SEABEE)	N
CBMU	Construction Battalion Maintenance Unit	N
CBR-D	Chemical, Biological, and Radiological Defense	CG
CBT	Computer Based Training	AF
CCIP	Common Configuration Improvement Program	AF
CDP	Combat Development Process	M
C-E	Communications-Electronics Equipment	A
CESE	Civil Engineering Support Equipment	N
CFSU	Construction Force Support Unit	N
CGS	Common Ground Station	A
CHP	Controlled Humidity Preservation	M
CID	Combat Identification	AF
CINC	Commander-in-Chief	All
CINCLANTFLT	Commander-in-Chief, Atlantic Fleet	N
CINCPACFLT	Commander-in-Chief, Pacific Fleet	N
CIS	Combat Intelligence System	AF
CMS	Countermeasures Management System	AF
CMT	Career Management Team	M
CN	Counter-Narcotics	N
COMNAVRESFOR	Commander, Naval Reserve Force	N
COMSEC	Communications Security	A
CONUS	Continental United States	All
COTS	Commercial Off-the-Shelf	AF
CQ	Combat Quadrangle	AF
CRAG	Compass, Radar, and Global Positioning System	AF
CRTC	Combat Readiness Training Center	AF
CS	Combat Support	A
CSAR	Combat Search and Rescue	AF
CSS	Combat Service Support	A
CUCV	Commercial Utility Cargo Vehicles	A
CUPID	Combat Upgrade Plan Integration Details	AF
CVW	Carrier Air Wings	N
DAMMS-R	Department of the Army Movement Management System – Redesign	A
DAMPL	Department of the Army Master Priority List	A
DMFA	Depot Maintenance Float Allowance	M
DMT	Distributed Mission Training	AF
DOD	Department of Defense	All
DOT	Department of Transportation	CG
EAC	Echelons Above Corps	A
EAD	Echelons Above Division	A
EAF	Expeditionary Aerospace Force	AF
EC	Electronic Combat	AF

Appendix C
Acronym Glosssary

Acronym	Nomenclature	Service
ECM	Electronic Countermeasures	AF
ECS	Equipment Concentration Site	A
EEAP	Enhanced Equipment Allowance Pool	M
ELSF	Expeditionary Logistics Support Force	N
EOD	Explosive Ordnance Disposal	N, CG
EOH	Equipment On-hand	A
EPA	Environmental Protection Agency	All
EPLRS	Enhanced Position Location Reporting System	A, AF
ERC	Equipment Readiness Code	A
eSB	Enhanced Separate Brigade	A
ESF	Emergency Support Function	CG
ESP	Extended Service Program	A
EST	Engagement Skills Trainer	A
EW	Electronic Warefare	AF
EWMS	Electronic Warefare Management System	AF
FA	Field Artillery	A
FAADC2	Forward Area Air Defense Command and Control	A
FDL	Fighter Defense Link	AF
FEMA	Federal Emergency Management Agency	N
FFG	Guided Missle Frigate	N
FISTB	Full-Crew Interactive Simulator Trainer Bradley	A
FLIT	Forward Looking Infra-Red	AF
FMT	Full Mission Trainer	AF
FMTV	Family of Medium Tactical Vehicles	A
FOV	Family of Vehicles	A
FP	Force Package	A
FSCATT	Fire Support Combined Arms Tactical Trainer	A
FSP	Force Support Package	A
FY	Fiscal Year	A
GATM	Global Air Traffic Management	AF
G-FAC	Ground -- Forward Air Control	AF
GPH	Gallon Per Hour	A
GPS	Global Positioning Systems	All
HARM	High Speed Anti-Radiation Missile	AF
HDCU	Harbor Defense Command Unit	CG
HEMTT	Heavy Expanded Mobility Tactical Truck	A
HETS	Heavy Equipment Transporter System	A
HMDS	Helmet Mounted Display System	AF
HMMWV	High Mobility Multi-Purpose Wheeled Vehicles	A, N
HNVS	Helicopter Night Vision Systems	M
HQDA	Headquarters, Department of the Army	A
HTS	HARM Targeting System	AF
IAP	International Airport	AF
IBU	Inland Boat Unit	N, CG
IDM	Improved Data Modem	AF
INS	Inertial Navigation System	AF
IOC	Initial Operational Capacity	AF
IR	Infra-Red	AF
IUW	Inshore Undersea Warfare	CG
JDAM	Joint Directed Attack Munitions	AF

Appendix C
Acronym Glosssary

Acronym	Nomenclature	Service
JSCP	Joint Strategic Capabilities Plan	CG
JSF	Joint Strike Fighter	M
JTCTS	Joint Tactical Combat Training System	AF
JTRS	Joint Tactical Radio System	AF
LADS	Laundry Advance System	A
LANTRIN	LASER Aided Navigation and Targeting Infra-red for Night	AF
LIN	Line Item Number	A
LMI	Logistics Management Institute	M
LMTV	Light Medium Tactical Vehicle	A
LOS	Line-of-Sight	AF
LSS	Littoral Surveillance System	N
LST	Newport Class Tank Landing Ships	N
MACS	Mobile Approach Control System	AF
MAFFS	Modular Airborne Fire Fighting System	AF
MAGTF	Marine Air-Ground Task Force	M
MARCORLOGBASES	Marine Corps Logistics Bases	M
MARDEZ	Maritime Defense Zone	CG
MARFORRES	Marine Force Reserve	M
MAST	Mobile Ashore Support Terminal	N
MCM	Mine Countermeasures	N
MCREM-R	Marine Corps Readiness Equipment Module-Reserves	M
MDS	Meteorological Data System	A
MDSU	Mobile Dividing and Salvage	N
MDSU	Mobile Diving and Salvage Unit	CG
MEF	Marine Expitionary Force	M
MES	Medical Equipment Set	A
MFD	Multi-Function Display	AF
MHC	Coastal Mine Hunter	N
MIE	Major Items of Equipment	AF
MIUW	Modernizartion of the Mobile Inshore Undersea Warfare	N, CG
MLRS	Multiple Launch Rocket System	A
MMS	Meteorological Measuring Set	A
MOPP	Mission Oriented Protective Posture	CG
MoTES	Mobile Threat Emitter System	AF
MPA	Manpower Authorized	N
MPS	Maritime Prepositioning Ship	M
MSO	Marine Safety Office	CG
MSU	Mobile Support Unit	CG
MTBF	Mean Time Between Failure	AF
MTT	Multi-Task Trainer	AF
MTV	Medium Tactical Vehicle	A
MTVR	Medium Tactical Vehicles Replacement	N
MTW	Major Theater War	All
NALMEB	Norway Air-Landed Marine Expeditionary Brigade	M
NBC	Nuclear, Biological and Chemical	A
NCR	Naval Construction Regiments	N
NCW	Naval Coastal Warfare	N
NGREA	National Guard and Reserve Equipment Appropriation	All
NLW	Non-Lethal Weapons	M
NMS	National Military Strategy	A

Appendix C
Acronym Glosssary

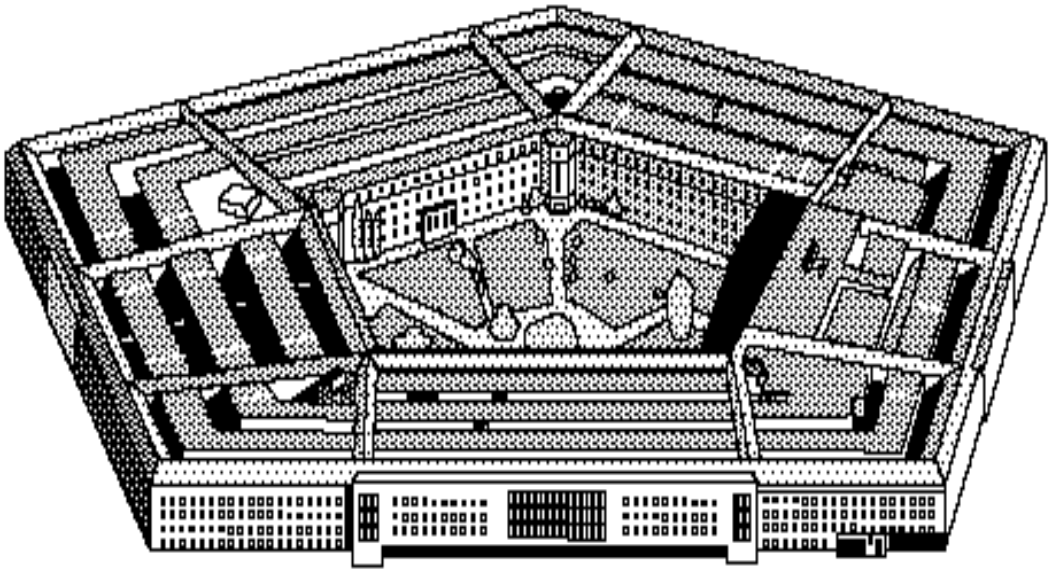
Acronym	Nomenclature	Service
NRF	Naval Reserve Force	N
NFRI	Not Ready for Issue	M
NVG	Night Vision Goggles	A, AF
NVIS	Night Vision Imaging System	AF
O&M	Operations and Maintenance	A
OCONUS	Out of the Continental United States	CG
OMFTS	Operational Maneuver From the Sea	M
OMNG	Operations and Maintenance, ARNG	A
OPLAN	Operational Plan	CG
OPSEC	Operations Security	A
OPSTEMPO	Operations Tempo	AF
OPTEMPO	Operational Tempo	A
ORC	Operational Reserve Carrier	N
ORI	Operational Readiness Inspection	AF
OSC	On Scene Commander	CG
OSD/RA	Office of Secretary of Defense/Reserve Affairs	All
PAA	Programmed Aircraft Authorized	N
PATS	Precision Attack Targeting System	AF
PCS	Peacetime Contributory Support	N
PDD	Presidential Decision Directive	CG
PIDS	Pylon Integrated Dispensing System	
PLS	Palletized Load System	A
PMC	Procurement Marine Corps	M
POM	Program Objective Memorandum	All
PPBS	Planning, Programming, Budgeting System	All
PSCR	Presidential Selected Reserve Call-up	CG
PSU	Port Security Unit	CG
PSYOPS	Psychological Operations	A, AF
RAM/RS	Rebuild to Standard	M
RBE	Remain Behind Equipment	M
RC	Reserve components	A
RCAS	Reserve Component Automation System	A
RF	Radio Frequency	AF
RDT	Requirement Development Team	AF
RIOEX	Riverine Interoperability Exercise	CG
RJ	Rivet Joint	AF
RM&A	Reliability, Maintenance, and Availability	AF
RNCF	Reserve Naval Construction Force	N
R-NET	Reserve Information Network	M
RNMCB	Naval Reserve Mobile Construction Battalions	N
ROWPU	Reverse Osmosis Water Purification Unit	A
RQMT	Requirement	M
RROC	Reserve Requirement Oversight Council	AF
RTC	Regional Training Center	AF
RTCH	Rough Terrain Container Handler	A
RUPS	Reserve Unit Priotity System	M
RWR	Radar Warning Receiver	AF
SAAS	Standard Army Ammunition System	A
SADL	Situation Awareness Data Link	AF
SAMS	Standard Army Maintenance System	A

Appendix C
Acronym Glosssary

Acronym	Nomenclature	Service
SATCOM	Satellite Communications	A, AF
SEABEE	Construction Battalion (CB)	N
SELRES	Selected Reservist	All
SHORAD	Short-Range Air Defense	A
SINCGARS	Single Channel Ground-Air Radio System	A
SMCR	Selected Marine Corps Reserve	M
SPS	Self-Protection System	AF
STAMIS	Standard Army Management Information Systems	A
SVC	Service	M
T/A	Training Allowance	M
T/E	Table of Equipment	M
T/O	Table of Organization	M
T/O&E	Table of Organization and Equipment	M
TAA-XX	Total Army Analysis (XX= Year)	A
TACP	Tactical Air Control Party	AF
TACS	Theatre Air Control System	AF
TADIL-J	Tactical Digital Information Link-J	AF
TADSS	Training Aids, Devices, Simulators and Simulations	A
TARS	Theater Airborne Reconnaissance System	AF
TBSP	Transportable Port Security Boat	CG
TCAS	Traffic Alert & Collision Avoidance System	AF
TOA	Total Obligation Authority	A
TOA	Table of Allowance	N
TOE	Table of Equipment	CG
TOW	Tubed-Launched Optically-Tracked Wire-Guided Missile	A
TPU	Tank and Pump Units	A
TQG	Tactical Quiet Generator	A
TROPO	Tropospheric Scatter Radio	A
UAV	Unmanned Aerial Vehicle	AF
ULLS	Unit Level Logistics System	A
ULT	Unit Level Trainer	AF
UMTE	Unmanned Threat Emitter	AF
USAR	United States Army Reserve	A
USNR	United States Navy Reserve	CG
UTD	Unit Training Device	AF
VTR	Video Tape Recording	AF
WMD	Weapons of Mass Destruction	CG
WRM	War Reserve Materiel	AF, M
WST	Weapon System Trainers	AF

Service Abbreviations

A	Army
AF	Air Force
CG	Coast Guard
M	Marine Corps
N	Navy
All	Applicable to all Services



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